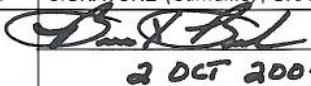
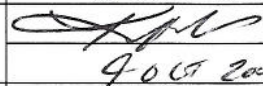
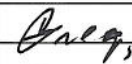
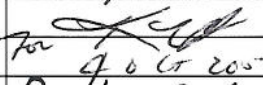
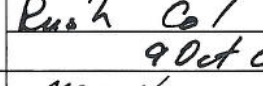
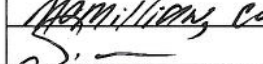


## STAFF SUMMARY SHEET

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	USAFA/JA	Coord	 2 OCT 2007	6			
2	10 MSG/CD	Coord	 9 OCT 2007	7			
3	10 MSG/CC	Coord	 9 OCT 2007	8			I read this study carefully because the last time I signed a FONSI and was not happy. Please make sure we process.
4	HQ 10 ABW/CV	Coord	 9 Oct 07	9			
5	HQ 10 ABW/CC	Sig	 11 Oct 07				

SURNAME OF ACTION OFFICER AND GRADE

SYMBOL

PHONE

TYPIST'S INITIALS

SUSPENSE DATE

Mr. Normandie, Cont

10 CES/CEV

333-3233

vld

no appropriate process.

SUBJECT

DATE

Finding of No Significant Impact (FONSI) for the Golf Learning Center and Driving Range

SEP 24 2007

## SUMMARY

1. PURPOSE: Obtain HQ 10 ABW/CC signature on the Finding of No Significant Impact (FONSI) at Tab 1 and review the Environmental Assessment (EA) at Tab 2.

2. BACKGROUND: The attached EA package analyzes the environmental effects of constructing a Golf Learning Center and associated driving range on the Academy. The proposed action would construct an approximately 2,700 square foot building to be utilized by the cadet golf team and an approximately 300 yard driving range. Public notification extended from 9 Feb 07 to 10 Mar 07.

3. DISCUSSION: Three alternatives are examined in detail:

a. Alternative 1: Construct the 2,700 square foot building and driving range. This alternative best meets the needs of the proponent and allows for phased construction of the separate projects without further environmental analysis.

b. Alternative 1A: Construct the 2,700 square foot building but not the driving range. This alternative would not meet the long-term needs of the proponent. Future construction of the driving range would require additional environmental analysis.


c. Alternative 2: No Action. This alternative would not meet the needs of the proponent. The cadet golf team would be without permanent facilities upon demolition and construction of the existing golf course clubhouse.

d. Alternatives rejected: Four options were considered in the Environmental Assessment but rejected because they did not meet the needs of the proponent or due to the environmental impacts.

d. In accordance with the National Environmental Policy Act, the FONSI obligates the Academy to alternative one. No mitigations are required for this action. Specific design features and best management practices will be implemented to prevent or minimize the potential for environmental impacts.

4. VIEWS OF OTHERS: Individuals within the following organizations reviewed the draft EA: HQ 10 ABW/XP, 10 CES/CEV, CECR, CEPDE, CEF, CEX, CECE, 10 AMDS/SGPB, HQ USAFA/JA, PAC, CECN, XPP, CEPDP, CWTTR, CECV, AHW-GO, ATO, CEC, 306 FTG/OSAA. Relevant comments were included in the EA (Tab 2). Organizational emails are included in Tab 3.

5. RECOMMENDATION: HQ 10 ABW/CC sign FONSI at Tab 1 and review EA at Tab 2.

  
DEBORAH A. McMURTREY, Lt Colonel, USAF  
Commander, 10th Civil Engineer Squadron

3 Tabs

1. FONSI

2. Environmental Assessment

3. Organizational emails

<b>REPORT DOCUMENTATION PAGE</b>					Form Approved OMB No. 0704-0188	
<small>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</small> <b>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</b>						
<b>1. REPORT DATE (DD-MM-YYYY)</b> 10-07-2007		<b>2. REPORT TYPE</b> Environmental Assessment			<b>3. DATES COVERED (From - To)</b> Aug 2006 - Oct 2007	
<b>4. TITLE AND SUBTITLE</b> Environmental Assessment Golf Learning Center and Driving Range					<b>5a. CONTRACT NUMBER</b>	
					<b>5b. GRANT NUMBER</b>	
					<b>5c. PROGRAM ELEMENT NUMBER</b>	
<b>6. AUTHOR(S)</b> Richard W. Normandie Matthew R. Lewis					<b>5d. PROJECT NUMBER</b>	
					<b>5e. TASK NUMBER</b>	
					<b>5f. WORK UNIT NUMBER</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> 10 CES/CEV 8120 Edgerton Drive USAFA, CO 80840					<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>  EA 06-002	
<b>9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b>					<b>10. SPONSOR/MONITOR'S ACRONYM(S)</b>	
					<b>11. SPONSOR/MONITOR'S REPORT NUMBER(S)</b>	
<b>12. DISTRIBUTION/AVAILABILITY STATEMENT</b> Approved for public release; distribution is unlimited						
<b>13. SUPPLEMENTARY NOTES</b>						
<b>14. ABSTRACT</b> <p>The United States Air Force Academy (Academy) has prepared an Environmental Assessment (EA) to assess the potential environmental effects resulting from construction of a Golf Learning Center and driving range at the Academy Eisenhower Golf Course.</p> <p>The EA analyzes the potential environmental impacts from proposed activities on air quality, airspace, biological resources, cultural resources, geology and soils, hazardous materials and waste management, land use, noise, and water resources. The EA also analyzed environmental justice and cumulative impacts of the Proposed Action. The Academy has determined that the impacts to these resources would not be significant.</p>						
<b>15. SUBJECT TERMS</b>						
<b>16. SECURITY CLASSIFICATION OF:</b>			<b>17. LIMITATION OF ABSTRACT</b>  UU	<b>18. NUMBER OF PAGES</b>  72	<b>19a. NAME OF RESPONSIBLE PERSON</b> William Siegele	
<b>a. REPORT</b>  U	<b>b. ABSTRACT</b>  U	<b>c. THIS PAGE</b>  U			<b>19b. TELEPHONE NUMBER (Include area code)</b> 719-333-6716	

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## **FINDING OF NO SIGNIFICANT IMPACT CONSTRUCT GOLF LEARNING CENTER AND DRIVING RANGE UNITED STATES AIR FORCE ACADEMY, CO**

**PROPOSED ACTION:** The United States Air Force Academy (Academy) proposes to construct a dedicated golf learning center and driving range for use by the Academy Golf Team. The facility would be constructed entirely on the Academy at the Eisenhower Golf Course to the north of the existing golf clubhouse.

**PURPOSE AND NEED:** The purpose of the Proposed Action is to create a dedicated facility to host the Academy golf training program for the Cadet Golf team. This action is needed because the existing facility does not have sufficient space for a university golf team, the future renovation of the clubhouse does not include space for the team and the current driving range is inadequate for the amount of use it receives.

**ALTERNATIVES CONSIDERED:** Two alternatives were considered and analyzed in this Environmental Assessment (EA). Along with the No-Action Alternative, another alternative (1A) would construct the Golf Learning Center facility but not the associated driving range. Additionally, three additional alternatives were considered but eliminated. A description of these alternatives and the justification for their elimination are detailed within the EA.

### **SUMMARY OF FINDINGS FOR THE PROPOSED ACTION**

Initial environmental analyses indicated that the proposed activities would not result in either short- or long-term impacts to the Air Installation Compatible Use Zone program, air quality, noise, visual resources, hazardous materials and wastes, cultural resources, safety-air safety, socioeconomics or environmental justice.

For this EA, the following biophysical resources were identified for further study at the Academy: land use, water resources, biological resources and geological resources. Findings for these resources are outlined below.

**Land Use.** Construction and operation of the proposed action would not adversely impact adjacent land uses. The area directly adjacent to the project area is designated as open space and community and would require a change in land use prior to implementation. The proposed action would not interfere with the activities or functions of these land uses. The proposed project area is not considered a visually sensitive area of USAFA.

**Water Resources.** Storm water management would be conducted during both the construction and operation of the Golf Learning Center and driving range. Roof runoff and additional site runoff would be directed to two small swales to the west and north that would allow for infiltration and maintain historic rates of release. This method would allow for the majority of runoff to be captured and controlled on-site while releasing excess stormwater at historic release rates. Construction of the driving range does not include grading or contouring for equipment golf ball removal, and native vegetation would continue to exist, additional potential erosion from tree, stump and shrub removal (minimized by reseeding) is anticipated to be minimal.

**Biological Resources.** As detailed in the proposed action, areas of removed vegetation would be restored with seed and all suitable trees would be transplanted. The loss of a small wildlife corridor and foraging site would be offset by suitable existing areas to the west and east. No threatened or endangered species are located in the project area nor would they be directly or indirectly affected by the proposed action.

**Geology and Soils.** Grasses and other landscaping would be reestablished in the disturbed areas immediately after construction is completed, thereby reducing the potential for erosion. Construction





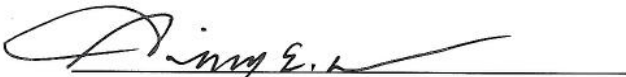
activities at this location would be planned to minimize the time that these soils were left exposed. With implementation of pre- and post-construction BMPs, as described in the proposed action, impacts to geology and soils would be minimal.

**CUMULATIVE IMPACTS:** The environmental assessment (EA) reviewed cumulative impacts that could result from the incremental impact of the action when added to other past, present or reasonably foreseeable future actions. With incorporation of specific design features and best management practices, cumulative impacts that would result from the Proposed Action would not be considered significant.

**MITIGATION:** No mitigation measures are required for the Proposed Action. Although no mitigation is required, specific design features and best management practices would be implemented during design and construction to prevent or minimize the potential for environmental impacts.

**DECISION:** Based on the EA conducted in accordance with the National Environmental Policy Act, the Council on Environmental Quality regulations and implementing regulations set forth in 32 CFR 989 (Environmental Impact Analysis Process), it is concluded that, with incorporation of best management practices for resources as described herein as well as incorporation of specific regulatory permit requirements, the environmental effects of the proposed construction and operation of the Golf Learning Center and Driving Range, are not significant and that preparation of an environmental impact statement is not warranted. For these reasons, a finding of no significant impact is made. An EA, dated March 2007, is hereby incorporated by reference, and is on file at the 10th Civil Engineer Squadron, Environmental Flight, 8120 Edgerton Drive, Suite 40, US Air Force Academy, Colorado 80840 ATTN: Environmental Planner.

APPROVED:



JIMMY E. MCMILLIAN, Colonel, USAF  
Commander, Headquarters 10th Air Base Wing

11 Oct 07  
DATE







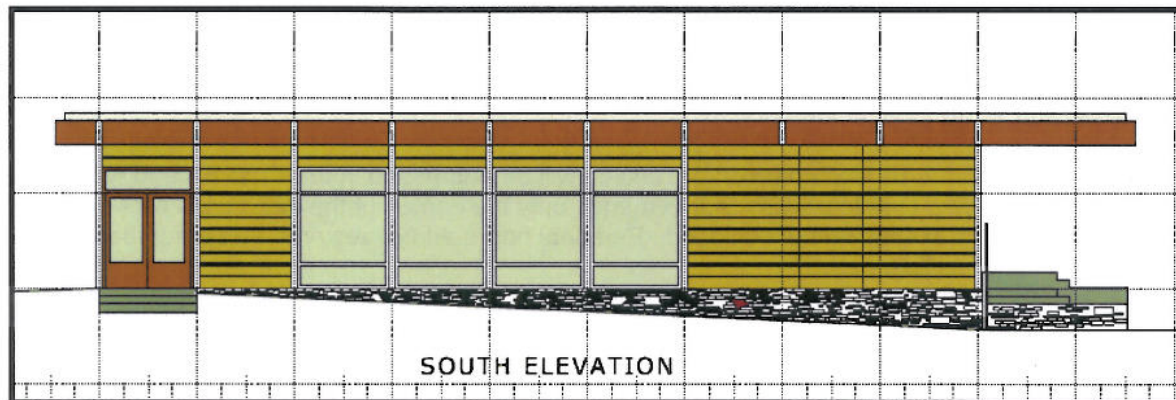
U.S. AIR FORCE



# Environmental Assessment

## Golf Learning Center and Driving Range

March 2007



Headquarters 10th Air Base Wing, United States Air Force Academy, CO

For Information Contact: Richard W. Normandie  
8120 Edgerton Drive Suite 40  
United States Air Force Academy, CO  
80840

COVER SHEET  
ENVIRONMENTAL ASSESSMENT  
Golf Learning Center Facility and Driving Range  
United States Air Force Academy, CO

Responsible Agency: Department of the Air Force

Proposed Action: Construct a new Golf Learning Center and Driving Range at the US Air Force Academy golf course.

Report Designation: Environmental Assessment (EA).

Abstract: The United States Air Force Academy (Academy) has prepared this Environmental Assessment (EA) to assess the potential environmental effects resulting from construction of a Golf Learning Center and driving range at the Academy Eisenhower Golf Course.

This EA analyzes the potential environmental impacts from proposed activities on air quality, airspace, biological resources, cultural resources, geology and soils, hazardous materials and waste management, land use, noise, and water resources. The EA also analyzed environmental justice and cumulative impacts of the Proposed Action. The Academy has determined that the impacts to these resources would not be significant.

Comments: Written comments and inquiries regarding this document should be directed to:  
Richard W. Normandie, 10 CES/CEV, 8120 Edgerton Road, Ste. 40, US Air Force Academy  
Colorado 80840-2400.

Privacy Advisory: As required by law, comments received will be addressed in the Final EA and will be made available to the public. Due to privacy requirements, only the names of the individuals making comments and specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

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## SECTION 1

### PURPOSE AND NEED FOR THE PROPOSED ACTION

This chapter has five sections: the purpose of and need for the Proposed Action; the location of the Proposed Action; a summary of the scope of the environmental review, criteria for the proposed action, identification of the biophysical resources applicable to the environmental assessment; and, a listing of applicable regulatory requirements.

#### 1.1 PURPOSE AND NEED FOR ACTION

The US Air Force Academy (Academy) proposes to construct a Golf Learning Center and Driving Range to be located at the Eisenhower Golf Course. The purpose of the Proposed Action is to create a dedicated facility to host the Academy golf training program for the Cadet Golf team.

The Proposed Action is needed for the following reasons:

**Current Facilities are Inadequate.** The existing facilities used by the golf team are located in a small space between the kitchen and the old bar within the existing clubhouse and are not adequate for a university level golf team. Currently, there is insufficient storage for clubs, uniforms, equipment, and supplies. Additionally, there is inadequate space for staff offices and meeting areas.

**Future Lack of Dedicated Facilities.** The existing Golf Course Clubhouse will be demolished and rebuilt. The new facility will be rebuilt using Non-appropriated Funds (NAF). Cadet functions are appropriately classified for support from Appropriated Funds (APF). During the development of the new clubhouse Needs Assessment the Athletic Department, Services and Civil Engineering leadership decided to pursue a separate facility for the cadet golf team. AFI 32-1022 requires mixing of NAF and APF construction funds to be approved by the Deputy Assistant Secretary of Defense (Installations). Requesting the waiver would commit USAFA to make a commitment to make Sustainment, Restoration, and Modernization (SRM) funds available and given the uncertainty of Air Force SRM funding levels there was reluctance to make this commitment. The Golf Course Clubhouse project scope was then determined based upon NAF rate of return calculations. Based on the size of facility that can be supported by NAF funds there will be no opportunity to build space for miscellaneous functions such as the cadet golf team.

**Existing Driving Range is Not Adequate For The Amount of Use It Receives.** The driving range at the golf course is currently shared by the golf team and the public. This arrangement has resulted in several safety concerns and inaccessibility for the public when the team is practicing on it. As it exists today, range balls hit by cadets frequently impact near the first and seventh holes causing a number of close calls between struck balls and patrons on the course. This is due to the length of the range and technology advancements that were not in existence when the range was constructed. This is not limited to the cadet golf team, however given the skill level of team members it occurs more frequently when the whole team is practicing. There are not many feasible options other than limiting the number of cadet opportunities for practice. The team currently staggers practice times, but have had a smaller than normal team the past few years. The team expects to return to a full team of fifteen players in the next few years.

#### 1.2 LOCATION OF THE PROPOSED ACTION

The United States Air Force Academy is located 6 miles north of Colorado Springs and 60 miles south of Denver. Slightly more than 19,000 acres are owned by the U.S. Air Force. Approximately 18,500 acres are dedicated to the mission of the Academy proper and 650 acres are known as the Farish Memorial Recreational Annex. The Academy is bordered by residential development to the north and south, commercial, industrial, and residential development to the east, and National Forest Land to the west. The Eisenhower Golf Course is centrally located at the Academy and is bounded by Academy Drive to

the south, Stadium Blvd. to the east, Interior and Cross Drive to the west, and a pine forest to the north. See Figures 1-1 to 1-4.



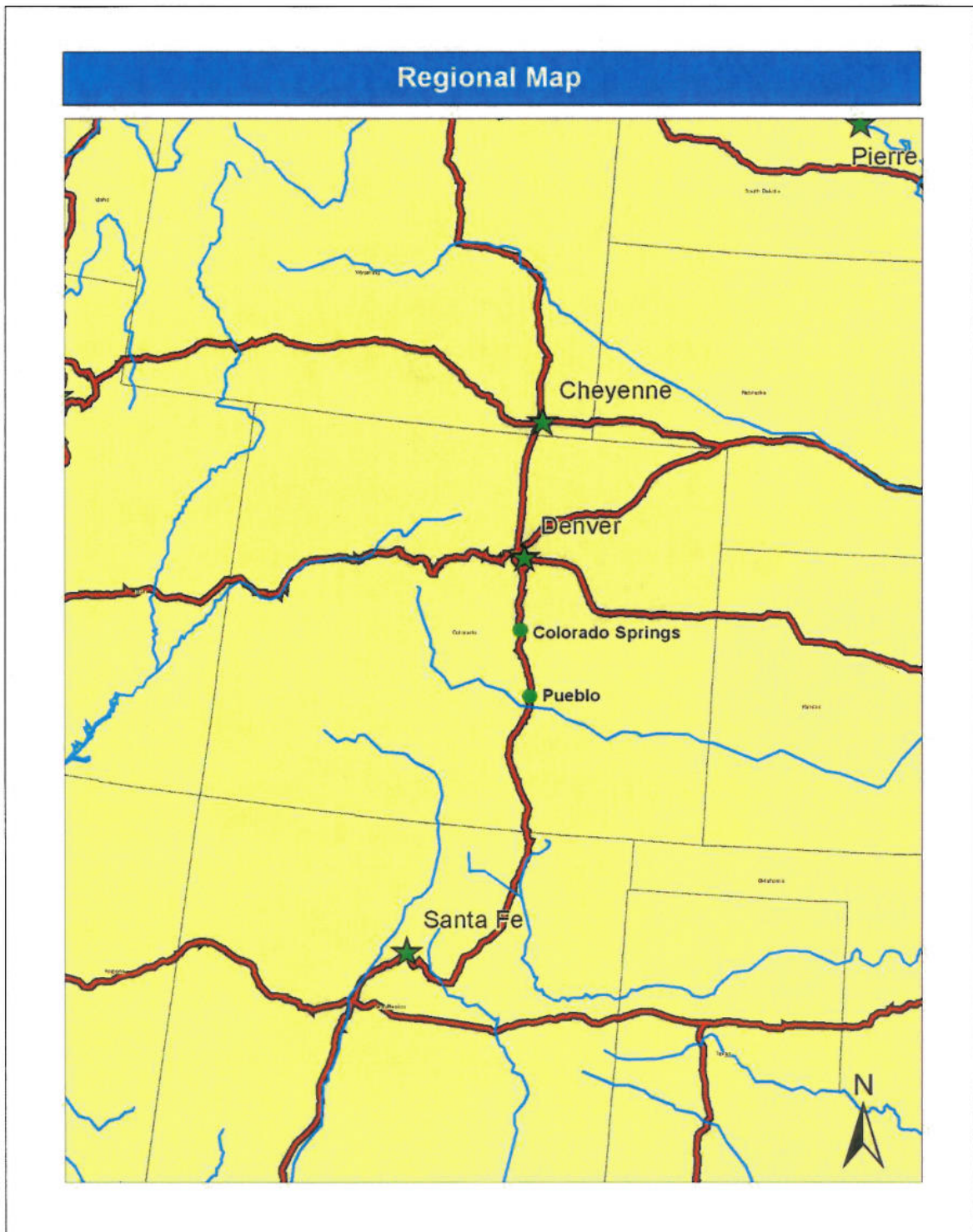


FIGURE 1-1; REGIONAL MAP

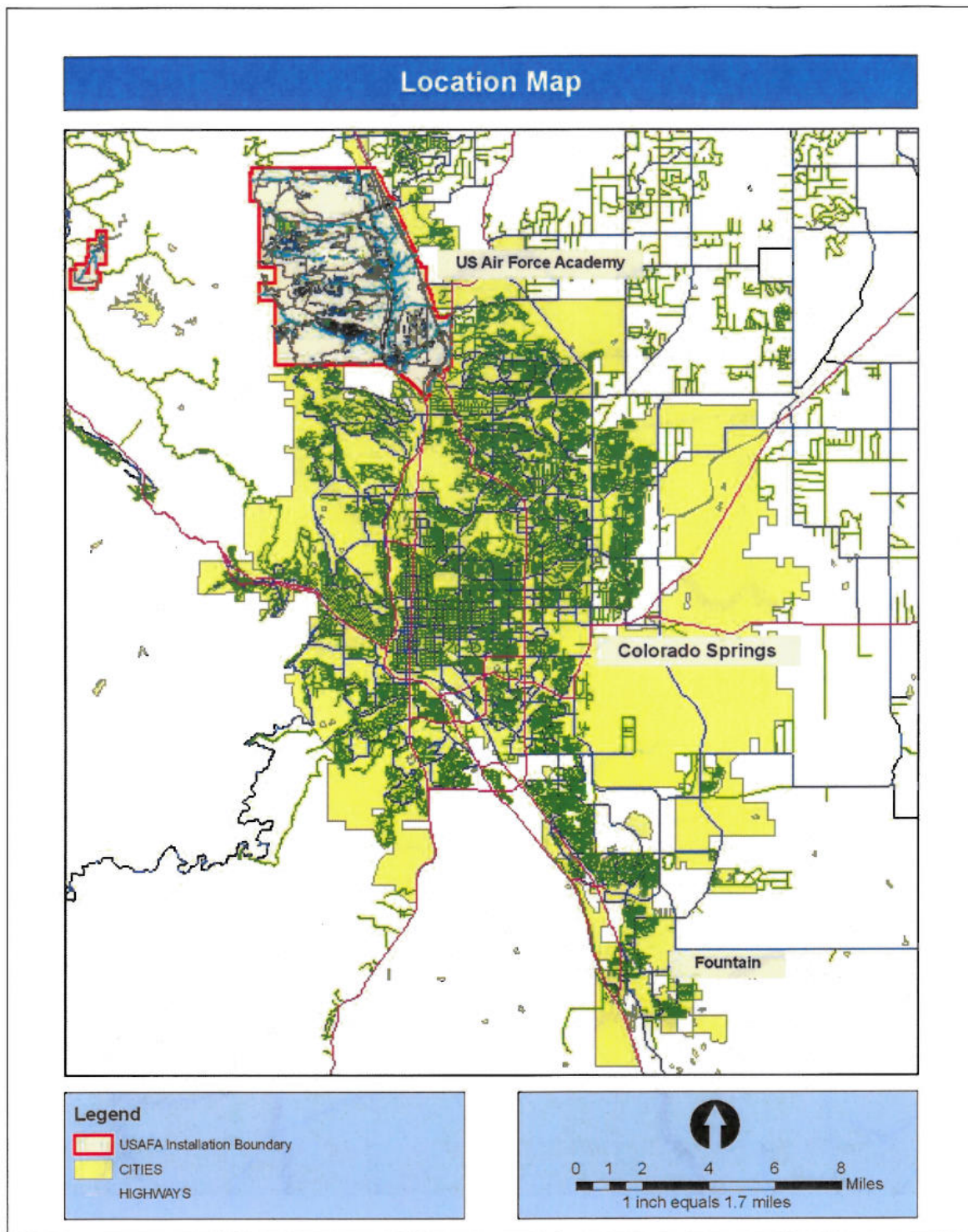


FIGURE 1-2; LOCATION OF USAFA



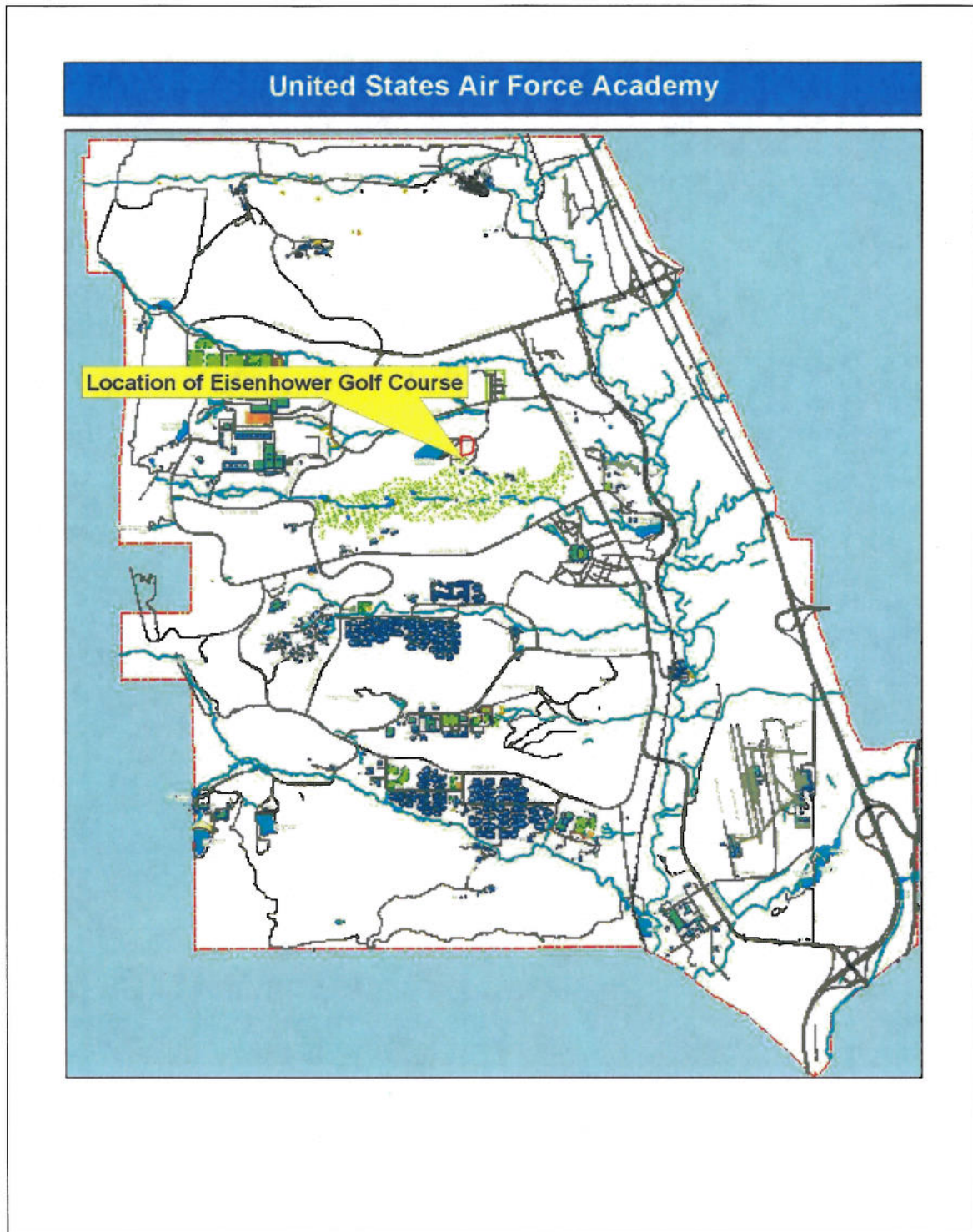


FIGURE 1-3; LOCATION OF EISENHOWER GOLF COURSE



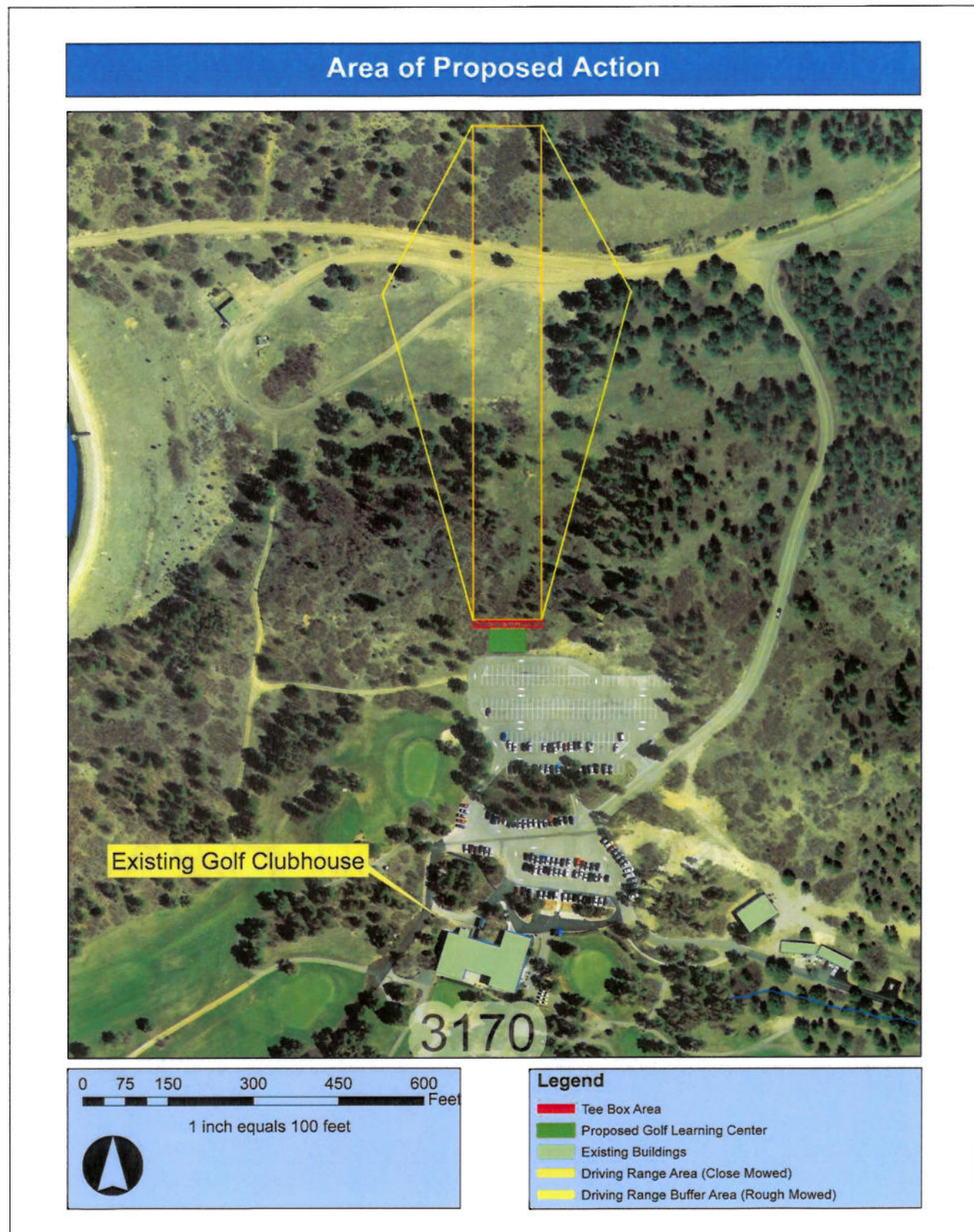


FIGURE 1-4; AREA OF PROPOSED ACTION



### 1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

The United States Air Force Academy (USAFA) has prepared this Environmental Assessment (EA) to assess the potential environmental effects resulting from construction of, and operation of, a Golf Learning Center and Driving Range at the Academy.

This document complies with the Environmental Impact Analysis Process set forth in 32 Code of Regulations (CFR) Part 989, which incorporates Air Force Instruction 32-7061 and implements the National Environmental Policy Act (NEPA), and the regulations implementing NEPA promulgated by the President's Council on Environmental Quality as Title 40 of the CFR, parts 1500-1508. This EA also evaluates any reasonable alternatives to the Proposed Action, including the No-Action Alternative.

This environmental analysis has been conducted in accordance with the President's Council on Environmental Quality (CEQ) regulations, Title 40 of the Code of Federal Regulations (CFR) §§1500-1508, as they implement the requirements of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. §4321, et seq., and Air Force Instruction (AFI) 32-7061, The Environmental Impact Analysis Process, as promulgated in Title 32 CFR Part 989. Title 32 CFR 989 addresses implementation of NEPA and directs Air Force officials to consider environmental consequences as part of the planning and decision-making process. These regulations require federal agencies to analyze the potential environmental impacts of the Proposed Action and alternatives and to use these analyses in making decisions on a Proposed Action. Cumulative effects of other ongoing activities also must be assessed in combination with the Proposed Action. The CEQ was instituted to oversee federal policy in this process. The CEQ regulations declare that an EA is required to accomplish the following objectives:

- Briefly provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).
- Aid in an agency's compliance with NEPA when an EIS is not necessary and facilitate preparation of an EIS when necessary.

AFI 32-7061, as promulgated in Title 32 CFR 989, specifies procedural requirements for the implementation of NEPA and preparation of the EA. This EA also identifies other environmental regulatory requirements relevant to the Proposed Action and alternatives. Regulatory requirements under the following programs, among others, will be assessed: Noise Control Act of 1972; Clean Air Act (CAA); Clean Water Act (CWA); National Historic Preservation Act; Endangered Species Act of 1973; Resource Conservation and Recovery Act (RCRA); Toxic Substances Control Act (TSCA) of 1970; and Occupational Safety and Health Act. Requirements also include compliance with Executive Order (EO) 11988, Floodplain Management; EO 11990, Protection of Wetlands; and EO 12898, Environmental Justice.

This Environmental Assessment evaluates the potential environmental impacts that may result from the implementation of the Proposed Action as well as possible cumulative impacts from other actions planned for USAFA. The EA also identifies required environmental permits relevant to the Proposed Action. As appropriate, the affected environment and environmental consequences of the Proposed Action may be described in terms of site specific descriptions or regional overview. Finally, the EA identifies mitigation measures to prevent or minimize environmental impacts, as required.

### 1.4 CRITERIA

The following criteria were determined to be critical to achieve the purpose of the proposed activity:

- The building should be large enough to accommodate the majority of activities associated with the golf team.
- The building should be located in an area that allows for the future construction of an adjacent driving range.
- Driving range should provide a minimum of 300 yards of hitting distance.



## 1.5 IDENTIFICATION OF BIOPHYSICAL RESOURCES APPLICABLE TO THE ENVIRONMENTAL ASSESSMENT

The following biophysical resources were identified for study at the Academy; land use, water resources, biological resources, and geological resources.

Initial environmental analyses indicated that the proposed activities would not result in either short- or long-term impacts to the Air Installation Compatible Use Zone program, air quality, noise, visual resources, hazardous materials and wastes, cultural resources, safety-air safety, socioeconomics, or environmental justice. The reasons for not addressing this and other subjects are discussed in the following paragraphs:

**Air Installation Compatible Use Zone Program and Airspace and Airfield Operations.** The Proposed Action would not involve any aircraft or result in any aircraft operations, nor would it result in any change to existing and planned aviation activities in the vicinity of the Eisenhower Golf Course. For this reason, accident potential, encroachment, airspace, and airfield operations are not evaluated further in this EA.

**Air Quality.** Fugitive dust from ground disturbing activities and combustive emissions from construction equipment would be generated during site clearing and construction. Air pollutant emissions would be short-term and localized, and would not result in any adverse effects on overall ambient air quality. However, compliance with the El Paso County Construction Permit requires site watering or other dust control measures to ensure particulate emissions would not leave the construction site. No chemical products would be used to control dust. For this reason Air Quality was not evaluated further in this EA.

**Noise.** The Proposed Action would not alter the measurable amounts of noise detectable at the boundary of the site. Noise would temporarily increase during construction but would not be persistent past project completion. For this reason, noise is not evaluated further in this EA.

**Visual Resources.** Implementation of the Proposed Action would result in the construction of a new building and several trees would be removed to allow for construction of the proposed driving range. However, the location of the Proposed Action is in a ravine and on a hilltop that is only visible from the golf course access road and is not considered a significant viewshed. Some additional trees may be planted to screen the driving range from the road, but this would be for aesthetics rather than to protect important scenic views. For this reason, visual resources are not evaluated further in this EA.

**Cultural Resources.** The Academy Cadet Area is a National Historic Landmark District. Other areas of the Academy have been determined to be 'eligible' for the National Register as a historic district. However, the golf clubhouse and courses were evaluated and found to be not architecturally significant or eligible in the 1997-2000 USAFA architectural survey. This means that coordination with the State Historic Preservation Officer is not required for this action. Additionally, no archaeological sites have been designated in the area of the proposed action. For this reason Cultural Resources were not evaluated further in this EA.

**Socioeconomics.** The Proposed Action would not alter (for better or worse) the socioeconomic environment in any way, such as through changes in local economic bases, rates of employment/unemployment, salary levels, land use zoning, plans or programs of other agencies, or a particular socioeconomic group. No substantial change to economic factors from the proposed construction activities or long-term operation would be expected to result from the Golf Learning Center or driving range. For these reasons, socioeconomic resources were not assessed further in this EA.

**Environmental Justice.** Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse human health or environmental effects of activities on minority and low-income populations. Concentrated areas of low-income, minority, or disadvantaged residents do not



exist within USAFA or within a five-mile radius of the approximate center of the Academy grounds. Because of this, there would not be an adverse affect on upon minority and low-income populations.

**Hazardous Materials and Wastes.** The construction of buildings typically requires the use of hazardous materials. Typical hazardous materials used for building construction activities include: aerosols, thinners, batteries, solvents, and PVC primer and glue. All hazardous materials would require authorization through the submittal of an AF Form 3952 and USAFA HAZMART approval process prior to purchase and use. The Academy strives to reduce the use of hazardous materials through alternative procurement. However, some hazardous materials do not have a correlating less or non-hazardous substitute.

The construction of buildings can generate solid waste that is regulated as hazardous waste. All hazardous waste generated at USAFA by any organization (with the exception of District 20 schools and Colorado Springs Utilities' water treatment plant) or contractor is managed through the Academy's Hazardous Waste Program which complies with state hazardous waste regulation. The Academy ensures hazardous waste is properly managed at satellite accumulation sites, the Hazardous Waste Facility and manifested to permitted hazardous waste disposal facilities. For this reason hazardous materials and wastes were not assessed further in this EA.

**Safety and Occupational Health.** Construction of this building would not alter the exposure of workers to job-site hazards, such as those from chemical exposure, radiation, explosives, industrial accidents, fire, or traffic accidents. No lead-based paints, asbestos containing materials, or PCB's would be encountered or utilized for construction. For this reason safety and occupational health was not assessed further in this EA.

## 1.6 APPLICABLE REGULATORY REQUIREMENTS

Potential regulatory permits applicable to the Proposed Action are presented in Table 1-1. The Proposed Action may require environmental permits and amendments to existing permits. The contractor would be responsible for ensuring that applicable permits are identified and obtained from base, local, state, and federal agencies.

Permit Required	Activity
El Paso County Air Quality Fugitive Particulate Matter Permit	Construction activities disturbing more than one acre
Compliance with National Pollutant Discharge Elimination System Construction General Permit COR10000F	Construction activities disturbing more than one acre.

TABLE 1-1

## SECTION 2

### DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

#### 2.1 BACKGROUND

The Academy has considered expanding the Eisenhower Golf Course for a number of years to better accommodate the intercollegiate golf program. For several years the team has utilized a small area of the existing golf clubhouse and some space in the Cadet Area to function. The existing clubhouse is scheduled to be demolished and rebuilt, however no space has been allocated for the golf team. Initial plans consisted of the construction of a Golf Learning Center, a dedicated driving range, and a new 9-hole golf course. Plans for the 9-hole course have been subsequently scrapped.



## 2.2 HISTORY OF THE FORMULATION OF ALTERNATIVES

The United States Air Force Academy looked at several alternatives for improving the quality of the golf facilities at the Academy. A series of meetings between the Academy Golf Coach, the Golf Course staff, CE, and other agencies resulted in two proposals (options 1&2) for construction of a golf learning center building and driving range. The difference between the two options was the location of the building.

## 2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED

### 2.3.1 CONSTRUCT LEARNING CENTER AND DRIVING RANGE OPTION 1

The Academy considered constructing the learning center and driving range adjacent to the existing non-potable reservoir service road, in the valley to the north of the existing clubhouse. There were several disadvantages associated with this alignment:

- **Golfers would be hitting balls into a hillside.** This would create a potential problem with balls not being contained within the range. It would be possible for a struck ball to clear the hilltop and impact individuals or vehicles traveling on the other side.
- **No utilities in the vicinity.** Significant work would be required to provide utilities to the facility
- **No parking in the area.** A new parking lot would need to be constructed to accommodate users of the facility.
- **Site would be located within reservoir spillway.** A catastrophic failure of the dam at non-potable reservoir #2 could result in the destruction of the facility and possibly loss of life.

### 2.3.2 INTEGRATE CADET GOLF TEAM INTO NEW GOLF CLUBHOUSE

This alternative would have combined golf course and cadet golf team activities into a newly constructed clubhouse. This option would require combining funds from two different sources. This is a highly improbable scenario based on uncertain funding levels in the future. This alternative was eliminated because it is highly speculative and would require a fixed funding schedule of Appropriated Funds, which is not possible under the current economic climate.

### 2.3.3 UTILIZE OFF-BASE COURSES/FACILITIES

The life of a cadet at the Academy is carefully regimented. Cadets do not have sufficient time to travel from the Cadet Area to an off-base facility to practice.

### 2.3.4 CONSTRUCT FULL SERVICE DRIVING RANGE

Another alternative considered but rejected was the construction of a full service driving range. A full service range would consist of recontouring the existing terrain to minimize the slopes, installing turf grasses (sod), and operating a golf retrieval machine. This alternative was premised on the range being constructed to meet NAF requirements, which would allow the installation public to utilize the range. This option would be beyond the criteria identified by the golf team and the Academy during the scoping process.

### 2.3.5 CONSTRUCT FACILITIES IN CADET AREA

Two possible locations were considered in the vicinity of the Cadet Area, the current putting greens on the west side of the Cadet Gym (Bldg. 2170) and the obstacle course located west of the Falcon Mews. The putting greens were rejected as being too small due to struck balls impacting the athletic fields to the north. Additionally, the planned Cadet Gym expansion would be into this area. The obstacle course was rejected due to the frequency of its use by the Character Development Course and the large tree clearing



effort that would be necessary. This alternative would not have located the Learning Center and Driving Range in the same area thereby causing travel between the two and limiting practice time.

### 2.3.5 CONSTRUCT AND UTILIZE SIMULATOR TECHNOLOGY

An additional alternative would be to install a simulator in a constructed Golf Learning Center building. This alternative would eliminate the driving range but still construct the standalone building. A simulator would be desirable but not as a replacement for a separate driving range. This alternative was eliminated because it did not meet the needs of the proponent for the following reasons:

- The elimination of the driving range would limit the ability of providing instruction to cadets under conditions that more closely resemble actual playing conditions.
- Simulators are useful for practice indoors during the winter months, however the most advanced simulators are only measuring the first two feet of flight and event. Additionally, players are hitting the ball off of a synthetic surface.
- A simulator would only allow one cadet to practice at a time (there are 15 on the team).

## 2.4 DETAILED DESCRIPTION OF THE PROPOSED ACTION

In order to best serve the needs of the golf team and patrons of the golf course, the Academy proposes to construct two separate projects, a golf learning facility and a driving range. The area of the proposed action would be adjacent to the golf course parking lot to the north of the existing clubhouse.

**Site Description.** The site of the golf learning facility would be constructed on a relatively flat area between two small hills in a small “saddle.” This area consists of native grasses, Ponderosa Pine, and Gambel’s Oak. To the north of the “saddle” is the proposed location of the driving range. The driving range area is also populated by native grasses, Ponderosa Pine, and Gambel’s Oak. A swath of land up to 520 feet wide in some areas would be cleared of trees and shrubs and revegetated with native grasses.

The driving range area descends into a small valley that is used as a spillway for the non-potable reservoir located to the west. Traversing the valley are two dirt roads that are used by maintenance personnel to access a pump house at the base of the dam and to reach the top of the dam. If the proposed action were implemented these roads would be closed during golfing activities. An existing, but seldom used dirt road located to the west of the golf course parking lot in the vicinity of the proposed learning center would be used by personnel to access the reservoir pump house (See figure 2-1).

**Building Description.** The Proposed Action would construct a new 42’ by 63’ golf learning center building to serve the Academy golf team. The facility would provide a locker room, classroom, and training area that would be specifically designed to serve the needs of the golf team. An office for the golf coach/staff, restrooms, a storage and work room for repairs on golf equipment, and an indoor/outdoor golf hitting space would also be constructed. The golf hitting space would have garage doors which could be opened to allow the hitting of golf balls outdoors and for training activities in all four seasons. The multi-purpose space would house an indoor classroom for training activities, including an overhead projection and screen for review of training films on golf. The indoor multi-purpose space and the golf hitting space would have glass windows or operable wall to open create one large area that would allow the use of both spaces simultaneously.

The facility would be constructed in the International architectural style prevalent on the Academy using more natural materials such as wood and stone. More subdued earth tones would be utilized for painting. A handicapped accessible ramp at the front of the building would provide access for disabled individuals who may occasionally access the facility.



**Driving Range Description.** The Proposed Action would construct a new golf driving range from just north of the proposed golf learning center to a hill across the adjacent valley (approximately 290 yards). The new range would require the removal of vegetation, including trees and shrubs to provide a clear area. Pines removed from the project area would be transplanted if possible. Removal of trees not acceptable for transplant would be accomplished by grinding down the stump several (4-5) inches below the ground but leaving the root-wad in place. The disturbed areas would be backfilled with soil and revegetated. This method would minimize ground disturbance and facilitate revegetation and minimize erosion of the area by reducing the amount of fill material that would be required. Best Management Practices would be utilized to stabilize soils to minimize the potential for erosion at the project site. Native grasses would be planted in the impact area with yardage markers placed at designated intervals. A swath of land (approximately 120 feet wide) would be close mowed ( $\frac{1}{4}$ " to  $\frac{3}{4}$ " tall). An additional 160 feet maximum on each side in some areas would be rough mowed (1  $\frac{1}{2}$ " and 3  $\frac{1}{2}$ " tall). No irrigation would be used to maintain grass cover within the range area. Because this range would only be utilized during daylight hours, no lighting would be required.

Native pines would be retained on the eastern edge of the range along Golf Course Drive. Pines would be planted to thicken up the forested area and reduce the likelihood of a ball leaving the range. A small maintenance road exists in the proposed range area; this road connects to two additional roads that provide access to the pump house and dam respectively. A gate would be installed at the junction of the access road and Golf Course Road; the gate would be closed during golfing activities.

#### 2.4.1 CONSTRUCTION ACTIVITIES

Construction of the Proposed Action would require site clearing and building construction as described herein.

**Site Clearance.** The proposed site for the Golf Learning Center and Driving Range would be cleared of vegetation and debris. The maximum total area to be cleared would be approximately 11 acres, though it is anticipated that actual clearance would be less than that. Vegetation would be retained in certain areas for aesthetics and screening purposes.

To prevent excessive erosion, to reduce run-off velocity, and to control the proliferation of noxious weeds, disturbed areas within the project area would be re-seeded and stabilized upon project completion.

**Golf Learning Center.** The Golf Learning Center building would be built using common construction techniques. The site would be cleared of vegetation and graded. The building would be concrete slab on grade at the floor, with concrete grade beams and caissons. The roof structure would be a combination of wood framing and glulam (glued laminated timber) beams. There would be windows on the north and south, with garage doors on the north (back) side that would open for golf practice in colder weather. The interior would contain a small restroom, coffee bar, office, classroom, locker room, storage, and mechanical/electrical room.

#### 2.5 DESCRIPTION OF ALTERNATIVE 1A

Alternative 1A would construct the Golf Learning Center building but not the proposed driving range. Construction activities would be identical to those described for the Golf Learning Center in section 2.4.1.

#### 2.6 DESCRIPTION OF THE NO-ACTION ALTERNATIVE

Under the No-Action Alternative the Academy would not construct the Golf Learning Center or the driving range. The intercollegiate golf team would be without a dedicated facility and would be required to use facilities that are not able to accommodate their requirements. When the proposed clubhouse would be constructed the team would be without a location at the golf course to give instruction and store equipment. The no-action is not desirable as it would not address the needs of the golf team or the Academy.

## 2.7 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The preferred alternative is to implement the Proposed Action as described in section 2.4.

## SECTION 3

### AFFECTED ENVIRONMENT

#### 3.1 LAND USE

##### 3.1.1 LAND USE PLANS AND POLICIES

To guide future development and land use decisions on USAFA, the Academy prepared a land use component to the General Plan for USAFA. The land use component identifies and analyzes functional relationships of organizational units and activities assigned to the Academy, and supports existing and future mission requirements by allocating or reserving land necessary to support ongoing and proposed operations.

##### 3.1.2 CURRENT LAND USE

Existing land use on the Academy includes approximately 1,109 developed acres spread throughout the installation. The remaining 17,406 acres are composed of a variety of uses that include recreational, training, and conservation. The proposed golf learning facility would occur in an area currently designated as Community (Commercial) which is defined as an area where goods or services may be purchased, and Open Space (General) which is an area of land which surrounds and buffers adjoining roads, parking and building development and should remain free of scattered structures. It is considered a land resource for unforeseen new development or the growth of adjoining existing development.

##### 3.1.3 FUTURE LAND USE

The Academy developed a future land use plan for the installation. Identifying land suitable for future development (usable land) is made possible by mapping all development constraints in a comprehensive fashion. To facilitate the base wide use of land in a manner supportive of general environmental objectives, the 1988 USAF Academy Land Use Plan suggested the following policies and strategies that are applicable to the proposed action:

- Accommodate any foreseeable development within the present Academy land holdings.
- Accommodate all expected growth and change to the base and its facilities within the defined sub-areas. The sub-areas are broad in functional definition and contain land area to accommodate all foreseen Academy additions.
- Maintain development edge boundaries for all sub-areas and specific function areas. "Creeping" development and ad hoc growth should be curtailed. The original concept of concentrated and controlled development, within a predominantly natural environment, should be maintained. Development should not occur outside specified area boundaries.
- Prohibit scattered facility construction. Since the completion of the Academy, a series of small-scale structures used for storage, maintenance, office, housing and community needs have developed around the base (i.e. Contractor Storage Area). All functions that occur in these scattered structures can and should be accommodated within specified area boundaries.
- Consider alternative supplementary transportation for all areas within the base. Increasing demands on roadways, parking areas and land resources require consideration of shuttle bus, van or other transit alternatives as supplements to the individual automobile, particularly for visitors.



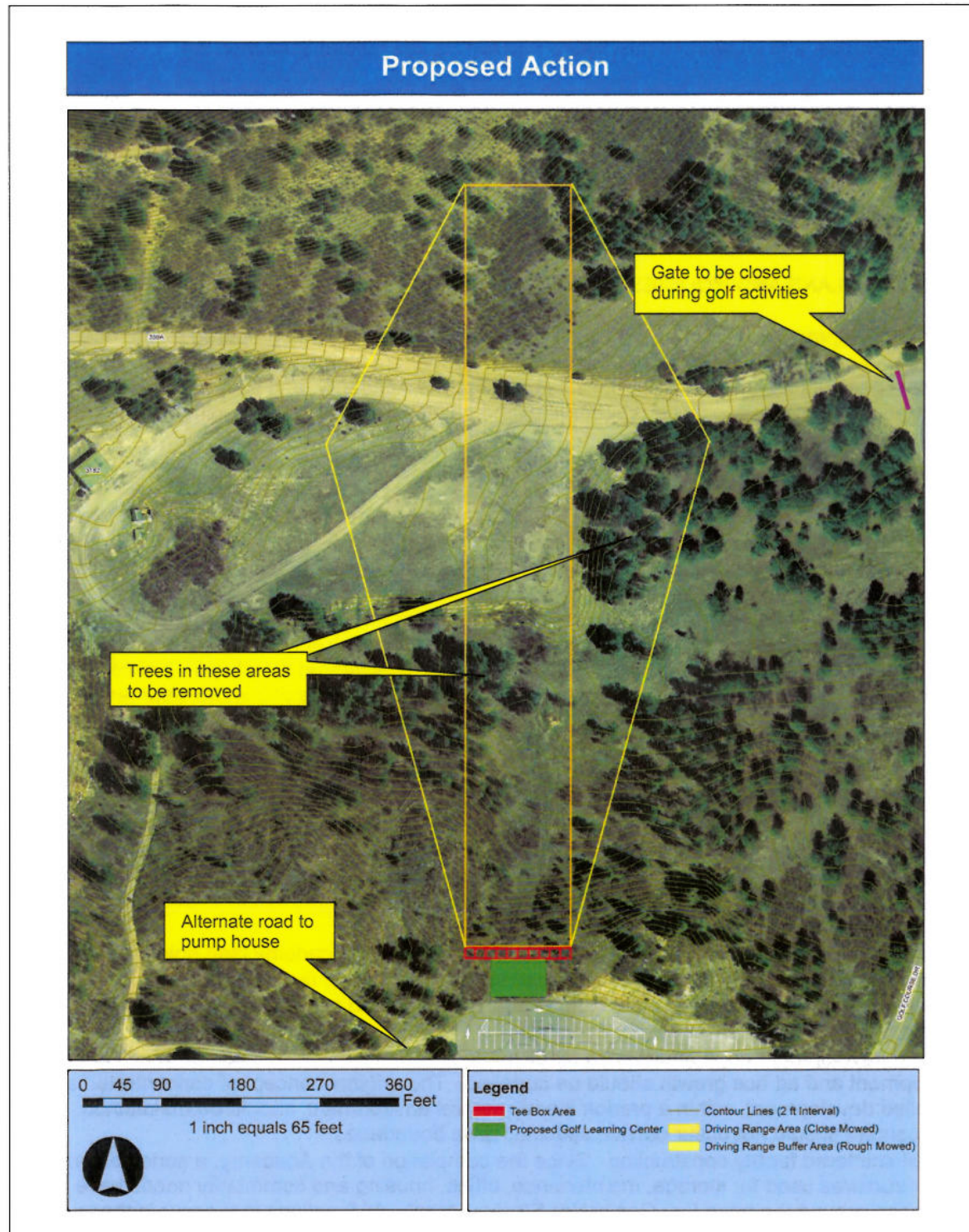


FIGURE 2-1; PROPOSED ACTION



FIGURE 3-1; EXISTING LAND USE



## **3.2 WATER RESOURCES**

### **3.2.1 SURFACE WATER**

Surface water drainages are among the most important natural resource features on the Academy. They represent areas of concentrated biodiversity, and different wildlife habitat values overlap in these areas. The predominant surface water feature on the base is Monument Creek, which runs from north to south on the east side of the Academy. The headwaters of Monument Creek originate from springs in the Rampart Range north and west of the Academy. The Academy has preserved Monument Creek, and it represents one of the natural remaining plains streams in the upper Arkansas River drainage. Monument Creek serves as a refuge for several species of rare plants and for the Preble's meadow jumping mouse (INRMP).

The major surface water features in the vicinity of the Proposed Action are the Parade Loop tributary to the north and Lehman Run to the south. Both of these features are located approximately 1,700 feet from the proposed project. These drainages traverse from west to east to their confluence with Monument Creek east of Stadium Blvd. These sub-watersheds are located within the larger Fountain Creek Watershed which drains into the Arkansas River. Lehman Run and Parade Loop tributary are ephemeral drainages (only convey flow during stormwater events) and are normally dry (URS). Due to the topography in the vicinity of the Proposed Action, stormwater from the proposed project does not regularly flow to these drainages. Currently, stormwater from the proposed project area travels east through the valley through a culvert under Golf Course drive and dissipates in the forest due to no discernable channel.

There are no springs located in the proposed project area.

### **3.2.2 GROUND WATER**

The proposed action lies on the western edge of the Denver aquifer, which composes part of the larger Denver underground water basin. This basin is formed of several layers of aquifers that are each separated by a confining layer. The water present in these aquifers was deposited millions of years ago when the basin was formed. Due to lack of connectivity between aquifers and to surface water (infiltration or recharge of aquifer from surface water), ground water present in the aquifers is not considered renewable.

## **3.3 BIOLOGICAL RESOURCES**

### **3.3.1 VEGETATION**

The Academy is situated along the Rocky Mountain Front Range, which extends, in Colorado, from the Wyoming border to the Arkansas River at Pueblo. The Rampart Range, which forms the western boundary of the Academy, is a north-south trending uplift within the Front Range that extends from Platte Canyon near Denver south to Pikes Peak. The 14,110-foot Pikes Peak is about 10 miles southwest of the Academy. The Academy's location in a bioregional context is distinguished by the meeting of different physiographic regions.

The north boundary of the Academy is about 6 miles south of the Palmer Divide, an east-west trending ridge that separates the South Platte and Arkansas River drainages. This divide also separates the northern and southern ranges of many plant and wildlife species. This results in the overlap on the Academy of several species at either the northern or southern limits of their ranges. The Academy is also unique because it represents the Front Range transitional ecosystem where the Great Plains and Southern Rocky Mountain physiographic regions come together. These factors combine to contribute to the important diversity of plant and wildlife species at the Academy.



The Academy's Integrated Natural Resources Plan describes the Academy's vegetation resources as significant because they encompass the elevation-related gradient from prairie grasslands to montane forests. The mosaic, or the pattern that the different plant communities create in relationship to one another, is a critical aspect of the biodiversity found at the Academy. Because the foothills are prime development areas along the Front Range, relatively intact foothills vegetation communities are declining in number and area. The Academy, along with Roxborough Park (about 50 miles to the north), represents one of the last remaining relatively "untouched" mature ponderosa pine (*Pinus ponderosa*)/scrub oak (*Quercus gambelli*) habitat type on the Front Range. Fire is a known disturbance mechanism affecting the health and distribution of these vegetation communities.

The major compositional trend of the vegetation over time is toward an increased density of conifers, especially in the Montane zone. Forests that were originally open woodlands are now dense forests; and where vegetation was originally grassland, there are young populations of ponderosa pine. This trend is dramatic in many cases and is a widespread pattern throughout the west. Three factors that have contributed to this are a shift toward a more mesic climate, overgrazing by livestock, and fire suppression. There are many types of vegetative cover on the base driven by local site differences and hydrology, soils, topography, elevation, and aspect.

The vegetation in the area of the proposed development area is ponderosa pine, Gambel oak, and mostly native perennial grasses and forbs. Diffuse knapweed and yellow toadflax, both state-listed noxious weeds, are widespread and abundant. Other common plants include hairy aster, sand dropseed, western wheatgrass, smooth brome, mountain muhly, cheatgrass, mullen, coyote willow, ragweeds, annual sunflower, and an assortment of early successional forbs (INRMP).

### 3.3.2 WILDLIFE

Because of habitat diversity and preservation, more native wildlife species exist on the Academy than would be expected in an area of equivalent size and proximity to an urban center. For example, 247 (55%) of the 444 bird species found in Colorado occur at the Academy, and about 70 (56%) of the 125 mammal species known to occur in Colorado are found on the installation.

Factors contributing to the high biodiversity on the Academy are the topographic variation, the location at the convergence of north-south and plains-mountains transition zones, the presence of high-quality riparian habitat, and the adjacency to the undeveloped forested expanses of the Pike National Forest. The large percentage of undeveloped natural areas on the base and the numerous vegetation types and their resulting mosaic, or pattern, provide a high degree of connectivity between habitat types and maintain essential migration routes for deer, elk, black bear, mountain lion, wild turkey, and other animals.

Monument Creek and its tributaries are important riparian habitats. These areas are important to wildlife, especially white-tailed deer, Preble's meadow jumping mouse, amphibians, and neotropical migratory birds. The highest diversity of species occurs in the riparian and shrub communities. Mature ponderosa pine stands with grass understory provide habitat for Abert's squirrel. Ridges and valleys that run west to east across the base are important travel corridors for wildlife. Most south-facing slopes are important feeding and warming areas for deer and elk. The north slopes of some ridges are used as bedding and thermal cover areas. Elk are most commonly observed in the northern half of the installation.

The Academy is home to mountain lions and black bears. Bears have become an increasing nuisance in housing areas and at other facilities. Sightings have been infrequent, and no human-lion encounters have resulted in injury.

The area of the proposed driving range is used extensively by elk for foraging and resting. Additional animals that could be present in the project area include the following: Mule and White-Tail deer, black bear, mountain lion, small-footed bat (*Myotis leibii*), least chipmunk (*Eutamias minimus*), several mouse species (*Peromyscus* spp.), cottontail rabbit, red fox, Gunnison's prairie dog (*Cynomys gunnisoni*), spotted ground squirrel (*Spermophilus spilosoma*), plains pocket gopher (*Geomys bursarius*), western



harvest mouse (*Reithrodontomys megalotis*), and coyote (*Canis latrans*). Common birds are wild turkey (*Meleagris gallopavo*), broad-tailed hummingbird (*Selasphorus platycercus*), Williamson's sapsucker (*Sphyrapicus thyroideus*), redtailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), scrub jay (*Aphelocoma coerulescens*), and rufous-sided towhee (*Pipilo erythrophthalmus*) and pygmy nuthatch (*Sitta pygmaea*). The shorthorned lizard (*Phrynosoma douglassi*), bullsnake (*Pituophis melanoleucus sayi*), and western rattlesnake (*Crotalus viridis*) also occur in these areas (INRMP).

### 3.3.3 THREATENED AND ENDANGERED SPECIES

A Federally-listed "threatened" species, the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) could occur in the project area though no proposed or designated critical habitat occurs in the area of the proposed action. Several rare animal species and species of special concern also are known to exist on USAFA, though none in the vicinity of the proposed action.

USAFA is known to support one of the largest and most stable populations of Preble's mice throughout its range. Preble's are most often found in dense, herbaceous riparian vegetation and closely adjacent uplands. Suitable habitat on the Academy is generally defined as falling within 300 feet of the 100-year floodplain. Delineated habitat is found at Lehman Run approximately 1,800 feet south of the proposed action (CNHP). However, this area is not currently suitable habitat because of extensive modification of the terrain from construction of the existing golf course.

### 3.3.4 WETLANDS

National Wetlands Inventory maps exist of the Academy, however these maps are incomplete, out of date, and have not been subjected to extensive investigation. USAFA commissioned a study resulting in the delineation of non-jurisdictional wetlands in 2002. The study shows no wetlands exist in the proposed project area (INRMP).

### 3.3.5 FLOODPLAINS

Floodplains are defined by Executive Order 11988 (Flood Plain Management), as lowland and relatively flat areas adjoining inland and coastal water that would be inundated by a 100-year flood. The nearest designated floodplain is Lehman Run approximately 1,800 feet to the south of the proposed project location.

## 3.4 GEOLOGICAL RESOURCES

### 3.4.1 PHYSIOGRAPHY AND GEOLOGY

The Geology of the United States Air Force Academy is influenced by its position at the transition from plains to mountains. The Rampart Range was formed during the latest period of mountain building when Precambrian Pikes Peak Granite was forced upwards along the Rampart Range fault. The fault separates the older Precambrian granite from the younger and softer sedimentary rocks that compose the dissected plains to the east. These rocks are primarily from the Cretaceous age (144 to 65 million years ago).

The oldest sedimentary rock exposed within the Academy area is the Fountain Formation of Pennsylvania and Permian age with the predominant bedrock being the Dawson Arkose of the Cretaceous and Paleocene age. The Dawson Arkose consists of coarse arkosic sandstone and of interbedded lenticular siltstone and clay.

The surface geology in the vicinity of the proposed action consists primarily of Husted Alluvium and Colluvium overlaying the Dawson Arkose. The Dawson Formation bedrock consists of weakly indurated (hardened), non-cemented, and friable sandstones derived from granite highlands to the west. The Dawson Formation also contains beds of firm silty claystone. Dawson Formation sandstone and

claystone may act as aquicludes, which are beds that inhibit percolation of water through the subsurface (Varnes and Scott, 1967).

### 3.4.2 TOPOGRAPHY

Geological mapping of the Academy conducted in 1967 identified five distinct landform types occurring at USAFA. 1) The steep lower slopes of the Rampart Range, an extension of the Rocky Mountain Front Range running from Wyoming to southern Colorado, 2) ridges of sedimentary rock that run parallel to the range, 3) mesas and foothill ridges separated by broad valleys extending eastward from the base of the mountains, 4) the Monument Creek valley, 5) an even to gently rolling area sloping southwestward towards Monument Creek. The proposed project area is within a valley and a ridge to south of Lehman Ridge.

### 3.4.3 SOILS

The Natural Resources Conservation Service identifies the soils in the proposed project area as Jarre-Tecolote complex, 8 to 65 percent slopes and Pring coarse sandy loam, 3 to 8 percent slopes. The Jarre-Tecolote complex occurs mostly on the slopes above the valley floor and covers approximately 50% of the project area. Pring coarse sandy loam is found on the valley floor where water has historically flowed through the area. The Pring soil occurs on approximately 50% of the project area.

The Jarre-Tecolote complex is composed of about 40 percent Jarre soil and 30 percent Tecolote soils. The Jarre soil is deep and well drained with moderate permeability. Surface runoff is medium to rapid with a moderate to high hazard of erosion. Large amounts of cobbles and stones are typical of this complex.

The Pring coarse sandy loam is a deep, noncalcareous (absent of calcium carbonate, calcium, or limestone) well drained soil. The Pring soil has rapid permeability with moderate available water capacity, medium surface runoff, and a moderate hazard of erosion.

## SECTION 4

### ENVIRONMENTAL CONSEQUENCES

#### 4.1 LAND USE

Potential impacts to land use from a proposed action were determined by evaluating whether an action is compatible with existing land use and in compliance with existing land use plans and policies. Potential land use impacts were analyzed by: 1) identifying and describing land uses that could affect or be affected by the proposed action, 2) assessing the degree to which construction and/or operation of facilities would interfere with the activities or functions of adjacent existing or proposed land uses; and, 3) determining whether interference with adjacent or nearby land use would be incompatible to the point that public health or safety would be threatened. Impacts to visual resources are also evaluated by considering the visual sensitivity of the area.

##### 4.1.1 PROPOSED ACTION

**Golf Learning Center.** The construction of the proposed Golf Learning Center would disturb less than one acre of area designated as community (commercial). The construction and operation of this facility would be incompatible with existing land use and would have to be changed from its current categorization to the following:

- **Athletics:** The land use category includes all facilities where athletic events and physical fitness takes place. Specific facilities include gymnasiums, field house, Falcon Stadium, and the Health and Wellness Center.



**Driving Range.** The construction of the proposed driving range would affect up to eleven acres of area designated as open space (general). The construction and operation of the range would be incompatible with existing land use would require a change from its current categorization to the following:

- **Open Space (Designated):** This open space category encompasses all outdoor uses that support the academic, military, and athletic programs. Facilities include the athletic fields, parade grounds, pools, family camping, parks and picnic areas, golf courses, riding stables, the Terrazzo level, and the Court of Honor. This category also includes all Academy easements for public transportation and utilities corridors.

Construction and operation of the proposed action would not adversely impact adjacent land uses. The area directly adjacent to project area is designated as open space and community. The proposed action would not interfere with the activities or functions of these land uses. The proposed project area is not considered a visually sensitive area of USAFA.

#### 4.1.2 ALTERNATIVE 1A

Impacts associated with implementation of Alternative 1A would be identical to those described for the Golf Learning Center in section 4.1.1.

#### 4.1.3 NO ACTION ALTERNATIVE

Land use on USAFA would not change from the baseline condition as a result of implementation of the No Action Alternative.

#### 4.1.4 MITIGATION

No mitigation measures are required.

### 4.2 WATER RESOURCES

Water resources include all surface and groundwater. For the purposes of this analysis, those water resources within the proposed project area, and the watershed areas affected by existing and potential surface water runoff, were investigated. Floodplains and wetlands (jurisdictional and non-jurisdictional) were also considered.

The criteria for determining the significance of impacts to Water Resources are based on water quantity, quality, and use; whether they occur within a 100-year floodplain or wetland, consume or add to surface water or groundwater resources, alter surface water flow patterns that could affect storm runoff, or alter releases of pollutants to water, or land (surface water drainages) that would affect the hydrologic system.

#### 4.2.1 PROPOSED ACTION

**Golf Learning Center.** Grading and construction of the learning center building would result in new soil disturbance that would increase the potential for erosion and sedimentation. During construction, runoff from the site could contain contaminants that could subsequently degrade the quality of receiving waters. The nearest receiving water to the proposed project area is Lehman Run, located approximately a ¼ mile to the south. However, a small portion of the stormwater proposed to be discharged from the building would be directed to an existing stormwater inlet located in the southeastern corner of the existing lower golf course parking lot. Any remaining stormwater would flow towards Lehman Run across the golf course where the existing turf grass would intercept it and allow for infiltration. Due to the minor additional impervious area created by the proposed building, and the ample ability of turf grasses to slow the velocity and turbidity of surface water run-off, no impacts to Lehman Run or existing stormwater system would occur.



The Proposed Action would include storm drainage systems as part of the site design. Roof runoff and additional site runoff would be directed to two small swales to the west and north that would allow for infiltration and maintain historic rates of release. This method would allow for the majority of runoff to be captured and controlled on-site while releasing excess stormwater at historic release rates. For this reason, impacts to water resources would not be expected as a result of the Proposed Action.

Additionally, the Academy requires that the following measures be taken for construction activities that disturb less than one acre:

- Install appropriate Best Management Practices to prevent sediment from leaving the site and BMP maintenance.
- Protect storm drain inlets to prevent sediment from entering storm drains.
- Immediately clean up spills of fuels, lubricants, and other HAZMAT.
- Conduct site inspections every 14 days or after precipitation events of 0.5 inches or more to ensure sediment is not leaving the site.
- Document inspections on a form developed by the Contractor.
- Projects shall be designed to comply with the EPA Region VIII NPDES Municipal Separate Storm Sewer System (MS4) permit.
- Post-construction storm water runoff from project sites shall be restricted to historical flows. Devices/designs to comply with this condition shall be approved by the Contracting Officer.

To ensure compliance with other Clean Water Act requirements, the Contractor:

- Shall not discharge any domestic, construction and/or industrial waste (including any hazardous material or hazardous waste) to the environment, sanitary or storm water sewer system without first securing CEV approval.
- Post construction storm water runoff control designs shall be consistent with criteria presented in the Colorado Springs City / County Storm Water Drainage Control Manual Volumes I and II. (Note that the manual requires control of runoff to historical rates of release from the 2-, 5-, 10-, 50-, and 100-year storms.) Post construction storm water management BMPs are identified in the Academy's NPDES General Permit for Storm Water Discharges from Federal Facility Small Municipal Separate Storm Water Systems COR042000.

**Driving Range.** Construction of the proposed driving range would involve clearing trees and shrubs from the project area and planting additional native grasses. A swath of land (approximately 120 feet wide) would be close mowed and an additional 160 feet maximum on each side in some areas would be rough mowed. While trees and shrubs would be removed from the project area, the addition of native grasses in those disturbed areas would increase the ability of the vegetation to decrease stormwater velocity as well as encouraging infiltration.

The drainage below Non-Potable Reservoir No. 2 is classified as ephemeral or only flows in response to adequate precipitation. The drainage below the reservoir does not have a discernable channel since the reservoir captures the majority of the drainage area reducing storm water volume at the proposed driving range.

The proposed cadet golf driving range straddles the Parade Loop tributary below Non-Potable Reservoir No. 2. The proposed driving range would not significantly increase the storm water run-off from this area

due to no contouring of the site, no additional impervious area, and maintaining native vegetation that acts to reduce run-off velocity promoting infiltration. The area below the proposed driving range could experience flooding with or without the proposed driving range. During intense short duration of precipitation over extended periods when soils have reached saturation, some localized flooding may occur requiring road sediment deposition removal, irrespective of the proposed driving range. This is a maintenance issue and not attributed to the proposed action.

Since the proposed action does not include grading the driving range for equipment golf ball removal, and native vegetation would continue to exist, additional potential erosion from tree, stump and shrub removal (minimized by reseeding) is anticipated to be minimal. No significant erosion from the site currently exists, other than typical erosion expected from storm water run-off in similar terrain at the Academy. Driving Range tree and shrub removal and grass cutting would only be performed within the designated impact zone and buffer area.

The Academy shall ensure that construction activities are conducted in accordance with the applicable state and federal regulations regarding stormwater management. The Academy would ensure that the following best management practices to prevent or minimize impacts would be incorporated into project design and implementation:

- Comply with EPA NPDES General Permit No. COR10000F for Storm Water Discharges from Construction Activities.
- Prepare a Storm Water Pollution Prevention Plan (SWPPP) for approval by 10 CEV.
- Install and adequately maintain all best management practices (BMP) described in the construction permit and relevant storm water control guidance documents.
- Maintain a copy of the SWPPP, electronic NOI, and NPDES General Permit No. COR10000F for Storm Water Discharges from Construction Activities, inspection reports and all applicable permit documentation requirements at the construction site.
- Submit a Notice of Termination (NOT) (EPA Form 3510-7) to the Contracting Officer (CO) and 10 CEV after:
  - Consultation with and release criteria approval by CEV
  - All construction debris, equipment, materials, and facilities are removed
  - Construction areas are inspected by CEV or the CO Technical Representative
  - All temporary storm water BMPs are removed
  - Ground cover is at 70 percent or when final stabilization of the site has been achieved as defined by the permit or other release criteria identified in the construction permit
  - Final inspection is performed
- Post-construction storm water runoff from project sites shall be restricted to historical flows. Devices/designs to comply with this condition shall be approved by the Contracting Officer

The implementation of appropriate post construction BMP's at the project site would ensure that stormwater flows would not exceed what is already being experienced and therefore would not adversely effect downstream conditions on the Academy or exacerbate areas of already marginal conditions. Additionally, appropriate BMP's minimize on-site contaminants are not released from the project site and discharged into receiving waters.



Storm water management would be conducted during both the construction and operation of the Golf Learning Center and driving range. No mitigation measures would be required. With the implementation of pre and post construction storm water BMPs as described in the proposed action, no impacts to natural resources and water quality would be expected.

#### 4.2.2 ALTERNATIVE 1A

Impacts to Water Resources under Alternative 1A would be identical to those described for the Golf Learning Center in section 4.2.1.

#### 4.2.3 NO ACTION ALTERNATIVE ACTION

The No Action alternative would not result in any construction activities at USAFA. No changes to groundwater or surface water would occur.

#### 4.2.4 MITIGATION

As detailed in the Proposed Action, no major grading would occur and any disturbed areas would be promptly revegetated. The location is not experiencing erosion at levels above what would be expected naturally and no waterways would be impacted by runoff from the site. Therefore, mitigation measures would not be required for the Proposed Action.

### 4.3 BIOLOGICAL RESOURCES

Biological resources refer to native, naturalized, or introduced plants and animals and the habitats in which they occur. Effects on biological resources would be considered significant if the action: substantially diminished habitat for a plant or animal species; resulted an impact to threatened or endangered species; substantially diminished a regionally or locally important plant or animal species; interfered substantially with wildlife movement or reproductive behavior; resulted in a substantial infusion of exotic plant or animal species; or, resulted in detrimental effects on wetlands or floodplains.

#### 4.3.1 PROPOSED ACTION

**Golf Learning Center.** Construction and operation of the proposed Golf Learning Center would disturb less than one acre of vegetation. Construction activities would clear the area of existing vegetation and construct a building in its place. This would be a small disturbance of vegetation at the Academy and would not significantly reduce the quantity of available vegetation. Any remaining disturbed areas would be revegetated in accordance with the Academy's Site Restoration and Revegetation Specification for Disturbed Areas.

**Driving Range.** The Proposed Action would result in the disturbance of up to eleven acres of relatively undisturbed vegetation. A number of Ponderosa pine and Gambel's Oak would be removed within the project area with some transplanted on the eastern edge of the proposed driving range for aesthetic reasons. Native grasses within the project area would be retained or reseeded with a 120 foot swath closely mowed and up to an additional 160 feet on each side of the swath to be rough mowed.

Care would be required to control the proliferation of State Listed noxious weeds. Four List B Noxious Weed species (Yellow Toadflax, Musk Thistle, Canada Thistle, and Diffuse Knapweed) have been documented in the vicinity of the proposed project area. List B noxious weed species are species that require the preparation of a weed management plan in order to prevent the continued spread of these species. Noxious weeds typically infest disturbed areas such as construction sites and dirt stockpile areas. To stop the proliferation of noxious weeds throughout the project area the following measures would be implemented:

The area would be mowed to maintain grass height and to prevent the maturity of weeds. This would be part of routine maintenance of the facility and grounds.

Disturbed areas within the project area would be re-seeded and stabilized as required by the EPA Region VIII NPDES Municipal Separate Storm Sewer System (MS4) permit and the USAFA Overarching Environmental Requirements. Weeds would be treated as needed in accordance with established USAFA procedures for the control of noxious weeds.

Elk and other animals that are frequently found in the project area are expected to avoid the area during periods of activity. It is anticipated that Elk, which currently use the area for foraging and resting as well as a movement corridor, would shift their activity to the west. Elk frequently utilize an area in the vicinity of the non-potable reservoir #2 to transit from north to south and it is likely that this area would be more extensively used as a result of implementation of the proposed action.

No wetlands or floodplains are in the immediate vicinity of the proposed project area. Therefore the Proposed Action would not be expected to result in significant adverse effects on wetlands or floodplains.

#### 4.3.2 ALTERNATIVE 1A

Impacts to Biological Resources under Alternative 1A would be identical to those described for the Golf Learning Center in section 4.3.1.

#### 4.3.3 NO ACTION ALTERNATIVE ACTION

The No Action alternative would not result in any construction activities at USAFA. No changes to biological resources would occur.

#### 4.3.4 MITIGATION

As detailed in the proposed action, areas of removed vegetation would be restored with seed and all suitable trees would be transplanted. The loss of a small wildlife corridor and foraging site would be offset by suitable existing areas to the west and east. For these reasons mitigation measures would not be required for the Proposed Action.

### 4.4 GEOLOGICAL RESOURCES

Geological resources consist of all soil and rock materials. Soil refers to a complex mixture of weathered mineral particles, decaying organic material, living organisms, gases, and liquid solutions overlying bedrock or other parent material.

The criteria for determining the significance of impacts to geology/soils are based on the extent the proposed action would alter or be affected by geologic or soil resources, such as top soils, mineral reserves, energy sources, seismic activity, or unique or important land forms. Additionally, the potential for large uncontrolled erosion was also considered.

#### 4.4.1 PROPOSED ACTION

Construction of the learning center and driving range would be located in an area that has been altered as a result of construction activities associated with the establishment of the Academy.

**Golf Learning Center.** Alteration of ground surface on the site would be limited to clearing, excavation to shallow depths, and grading. Soils in the vicinity of the proposed building are deep and well drained with moderate permeability. Surface runoff is medium to rapid with a moderate to high hazard of erosion. Due to the potentially high hazard of erosion that could be exacerbated by the removal of vegetation the



disturbed areas would be stabilized and reseeded upon project completion and a reclamation plan developed in accordance with the Academy's Overarching Environmental Specifications.

**Driving Range.** Soils in the area of the proposed driving range have a moderate to high hazard of erosion. This hazard is elevated with increased loss of vegetative cover. Generally, the removal of vegetation could create conditions that would result in substantial erosion within the project area. To minimize the potential of the occurring, construction activities at this location would be planned to minimize the time that these soils were left exposed. Best Management Practices, such as those outlined in subsection 4.2 would be installed to minimize erosion. Specific BMP's would be determined in the Stormwater Pollution Prevention Plan (SWPPP) for the construction NPDES permit. Grasses and other landscaping would be reestablished in the disturbed areas immediately after construction is completed, thereby reducing the potential for erosion.

With implementation of best management practices as described in the proposed action, impacts to geologic resources on USAFA would not be considered significant.

#### 4.4.2 ALTERNATIVE 1A

Impacts to Geological Resources under Alternative 1A would be identical to those described for the Golf Learning Center in section 4.4.1.

#### 4.4.3 NO ACTION ALTERNATIVE

No ground disturbing activities would occur. Therefore, no impact to physiographic features and soils would be anticipated.

#### 4.4.4 MITIGATION

Mitigation measures would not be required.

### 4.5 CUMULATIVE AND LONG-TERM IMPACTS OF THE PROPOSED ACTION

Proposed projects in the vicinity of the Proposed Action consist of the demolition and reconstruction of the existing golf course clubhouse, reconstruction of the existing greens, and replacement of the irrigation system.

#### 4.5.1 LAND USE

Future construction projects planned for USAFA would be consistent with planned land use patterns. These activities would not cumulatively impact land use as incompatible land uses would not result. For this reason, cumulative impacts would not be considered significant.

#### 4.5.2 WATER RESOURCES

The cumulative impacts of continued development in the past at USAFA have been the degradation of several stream corridors. A number of factors have contributed to this. Erosion and sedimentation during construction, increased stormwater volume, increased stormwater peak flows, and sequential frequency of stormwater events have all contributed to stream deterioration. Soils at the Academy generally consist of decomposed granite that exhibit low water and moisture holding capacity. During precipitation events, storm water is absorbed by these highly permeable soils, but once saturation occurs or the run-off velocity is excessive, erosion of the soils occurs rapidly.

Efforts to control stormwater on the Academy have focused on maintaining post construction historic rates of release from the project site. This method of control mitigates stream degradation such as stormwater volume, erosion and sediment deposition.

Future projects in the vicinity of the Proposed Action would utilize source control to minimize downstream impacts. The objective of source control is to imitate the existing hydrologic conditions and in so doing preserve the existing water balance to minimize downstream impacts. This could be accomplished on site by a number of methods which would be project specific. With implementation of source control future actions would not be expected to cumulatively contribute to impacts on water resources.

#### **4.5.3 BIOLOGICAL RESOURCES**

Increased development at the Academy has contributed to the reduction of habitat for mammals. This is an on-going cumulative effect that has resulted in fragmented wildlife corridors and marginal habitat in some areas. The ability to mitigate those effects is beyond the scope of this environmental assessment. Future projects that are planned in the vicinity of the Proposed Action would not contribute to this. The loss of habitat due to the Proposed Action would be minimal and would only impact wildlife during periods of activity. Native vegetation would remain and the area would not be significantly degraded over current conditions. Therefore, the cumulative impact of the Proposed Action on biological resources would not be considered significant.

#### **4.5.4 GEOLOGICAL RESOURCES**

The Proposed Action is one of two planned construction projects for the golf course. These areas have been previously disturbed and modified by human activities. Despite the potential for erosion in these areas, the implementation of appropriate BMP's, including revegetation, as required would reduce the potential for large scale erosion. Based on this the Proposed Action would not be expected to cumulatively contribute to impacts to geologic resources.

#### **4.6 INDIRECT IMPACTS**

While direct environmental effects are caused by the action and occur at the same time and place as the action, indirect effects are those effects caused by the action that occur at a later time or are farther removed in distance from the action but are still reasonably foreseeable. As defined in 40 CFR Part 1508.8, indirect effects may include growth inducing effects and other effects related to the induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

The Proposed Action would result in the construction of a new Golf Learning Center building and driving range. This facility would be used exclusively by members of the Academy golf team and would not be accessible by the public. The availability of a new learning center and driving range at this location would not be expected to result in any indirect effects associated with population growth or land use in the Colorado Springs area.

#### **4.7 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS**

Section 102(2)(C)(ii) of NEPA requires Federal agencies to identify any adverse environmental effects that cannot be avoided should the Proposed Action be implemented. Unavoidable impacts would result from the implementation of the Proposed Action:

Noise from site clearing and roadway construction activities would occur. This increase in noise levels would be short-term and limited to the immediate area of construction. Noise-generating activities would take place during daytime hours and would be at levels that would not cause hearing impairment.



Loss of up to 11 acres of open space would result from construction of the proposed road. It would be maintained in a semi-original state by the retention of native grasses.

The emission of air pollutants associated with site clearing and construction would be an unavoidable condition, but is not considered significant.

The use of nonrenewable energy resources is considered unavoidable, but the amount used would not be considered significant.

Temporary and localized increases in traffic would be unavoidable during the construction period.

With incorporation of appropriate design features into the project and compliance with stipulations of regulatory permits, unavoidable impacts would be prevented or minimized.

#### **4.8 RELATIONSHIP BETWEEN SHORT-TERM USES AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY**

NEPA requires consideration of "the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity" (40 CFR 1502.16). This includes evaluating whether the short-term impacts outweigh the long-term benefits of the project. For this EA, short-term refers primarily to the period of construction, the time when the most extensive environmental impacts are likely to occur.

The Proposed Action would implement ground-disturbing activities that would produce short-term effects to soil, water quality, and habitat while providing a quality educational environment with minimal long-term environmental effects. Additionally, the improved facilities would potentially allow the Academy to better train the existing golf team and attract better golfers. This would enhance the Academy's profile and expand the candidate pool for potential Cadets.

#### **4.9 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

NEPA requires that environmental analysis include identification of irreversible and irretrievable commitments of resources which would be involved if the proposed action were to be implemented.

The term irreversible is used to describe the utilization of a resource and the subsequent limits of that resource for future use. Primarily this term is used to describe nonrenewable resources such as minerals and energy resources or those resources that are renewable only over long time spans.

Irretrievable is used to describe those resources that through consumption are not renewable or recoverable for future use, such as the extinction of a species or disturbance of a cultural site.

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, and human resources. The use of these resources is considered to be permanent. Material resources used for the Proposed Action include building materials (for construction), concrete and asphalt, and other various materials. The materials that would be consumed are not in short supply and are readily available from suppliers in the Colorado Springs area. Use of these materials would not limit other unrelated construction activities, and therefore, would not be considered significant.

Energy resources would be irretrievably lost. These include petroleum-based products such as gasoline and diesel fuel, natural gas, and electricity. During construction, gasoline and diesel fuel would be used for operation of the construction equipment and other vehicles. Consumption of these energy resources would not place a significant demand on their availability in Colorado. Therefore, no significant impacts would be expected. The use of human resources for construction is considered an irretrievable loss. This is because the use of human resources limits other activities that associated personnel could be involved with. However, the use of human resources would be considered beneficial as it would provide

employment opportunities. Implementation of the Proposed Action would not result in the destruction of environmental resources. No wildlife habitat or cultural resources would be lost or adversely affected from implementation of the Proposed Action.

## SECTION 5

### LIST OF PREPARERS

<u>NAME</u>	<u>TITLE</u>	<u>ORGANIZATION</u>
Richard W. Normandie	Environmental Planner	10 CES / CEV
Matthew Lewis	Water Quality and Hazardous Waste Manager	10 CES / CEV

## SECTION 6

### CONSULTATION AND COORDINATION

#### 6.1 PERSONS AND AGENCIES CONSULTED

Brian Bush	(HQ USAFA / JA)
Eddie Lee	(HQ USAFA / PA)
William Siegele	(USAFA / CECV)
Dr. Brian Mihlbachler	(USAFA / CECN)
Diane Strohm	(USAFA / CECN)
George Koury	(USAFA / AHW-GO)
Bryce Tobyne	(10 CES / CEV)
Matt Lewis	(10 CES / CEV)
Kit Roupé	(10 CES / CEV)
Deven Volk	(10 CES / CECV)
Bryan Suhler	(10 CES / CECE)
Tony Scites	(10 SVS / SVBG)
Mark Baker	(Lantz-Boggio Architects)



## SECTION 7

### REFERENCES

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- Koury, George. E-mail to Richard Normandie. 01 Aug. 2006, 12 Sep. 2007.
- Lewis, Matt. E-mail to Richard Normandie. 3 Nov. 2006.
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- Volk, Deven. "Golf Learning Center." E-mail to Richard Normandie. 3 May 2007.





## **Normandie Richard W Contractor 10 CES/CEV**

---

**From:** Roupe Kit NMI Contractor 10 CES/CEV  
**Sent:** Thursday, August 10, 2006 4:06 PM  
**To:** Normandie Richard W Contractor 10 CES/CEV  
**Subject:** RE: Golf Learning Center

Yes Rich,

The golf clubhouse and courses were evaluated and found to be not architectural significant or eligible in the 1997-2000 USAFA architectural survey prepared by CH2M HILL. So, that means none of the golf buildings is important to the Academy historic district eligibility and coordination with SHPO is unnecessary.

Let me know if you need to see the individual sheets and pictures. I'll show you where the books are so you can use them if I'm not around.

V/r,

Kit Roupé, AICP  
Base Community Planner  
10 CES/CEV  
voice 3-8408, fax 472-0999

>  
>From: Normandie Richard W Contractor 10 CES/CEV  
>Sent: Thursday, August 10, 2006 2:38 PM  
>To: Roupe Kit NMI Contractor 10 CES/CEV  
>Subject: Golf Learning Center  
>  
>Kit,  
> Could send me something saying that the Golf Learning Center does not require SHPO coordination and why?  
>Thanks, I would appreciate it.  
>  
>//SIGNED//  
>Richard W. Normandie, Contractor, USAFA Environmental Planner  
>  
>





<b>REVIEW COMMENTS</b>			Date Reviewed: 1/30/07
PROJECT: Draft EA - Golf Learning Center and Driving Range			<b>FROM:</b> Diane Strohm
			10 CES/CECN
<input type="checkbox"/> PRELIM F&R <input checked="" type="checkbox"/> 35% Submittal <input type="checkbox"/> 65% Submittal <input type="checkbox"/> 90% Submittal <input type="checkbox"/> 100% Submit.	<input type="checkbox"/> CIVIL <input type="checkbox"/> ARCHITEC. <input type="checkbox"/> STRUCTURAL <input type="checkbox"/>	<input type="checkbox"/> MECHANIC. <input type="checkbox"/> ELECTRICAL <input type="checkbox"/> GENERAL	<b>TO:</b>
DRAWING NO. OR PARAGRAPH NO.	ITEM NO.	COMMENT	REVIEW ACTION
Table of Contents	1	Missing "3.3.1 Vegetation" under 3.3 Biological Resources	
2 4.1 Construction Activities	2	Under "Driving Range" on page 10-11: Any trees to be planted along eastern boundary of project area should be transplanted from within driving range area if at all possible. This will depend on project timing (if clearing is done in dormant season: approximately October - April). Project manager should coordinate with NR department on timing, to facilitate this transplanting within the project area, or to provide the opportunity to sell any transplantable trees before clearing.	
4.2.1 Proposed Action	3	Under "Driving Range" section on page 21: It is unclear as to whether stumps with roots (rootwads) will be pulled out when trees are cut. Stump removal is mentioned in paragraph 4 of this section. If rootwads are removed, they will need to be disposed of off-base, as they are not accepted in NR woodlot or in compost yard. Resultant depressions in soil would likely require fill material to regrade surface. This should be weed-free topsoil, as stipulated in Overarching Environmental Specifications. It may be possible to cut trees and grind stumps to several inches below surface, which would minimize ground disturbance and erosion potential. A small amount of topsoil and subsequent seeding would facilitate future mowing.	
4.2.1 Proposed Action	4	Depending on project timing, there may be an opportunity to collect cones from ponderosa pines for seed for future base reforestation needs. There appears to be a relatively light cone crop setting up this year, but we like to utilize opportunities such as these when possible. Cones mature in September. If clearing has not been done before then, project manager is asked to coordinate with the NR department to provide the opportunity to fell any appropriate trees to facilitate cone collection at this time.	

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## Normandie Richard W Contractor 10 CES/CEV

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**From:** Lee Eddie D Civ USAFA/PAC  
**Sent:** Tuesday, January 30, 2007 2:56 PM  
**To:** Normandie Richard W Contractor 10 CES/CEV  
**Subject:** FW: Draft Environmental Assessment Review

**Attachments:** form519.doc



form519.doc (83  
KB)

Richard

Good to go.  
Thanks.

Eddie  
//SIGNED//  
EDDIE LEE  
Chief, Community Relations Division  
2346 Academy Drive  
USAF Academy, CO 80840  
719-333-7648  
fax: 719-333-4402

-----Original Message-----

**From:** Normandie Richard W Contractor 10 CES/CEV  
**Sent:** Monday, January 22, 2007 9:15 AM  
**To:** Barrett Debbie K Civ 10 CES/CEPDE; Bush Brian X Civ USAFA/JA; Ceciliani Paul M Civ USAFA/ATO; Chaltry Dennis R Civ 10 CES/CEF; Gann Sharon M Civ USAFA/CEC; Henderlong Keith T Maj 94FTS; Lee Eddie D Civ USAFA/PAC; Leikam Karen R Contractor 10 CES/CECR; Lima Joseph E Contractor 10 CES/CEX; McCoy Brian L TSgt USAFA/CWTTR; Muhlbachler Brian S Civ 10 CES/CECN; Miranda Jerry NMI Civ 306 OSS/OSAA; Mitnik James P Civ HQ USAFA/CEPDP; Normandie Richard W Contractor 10 CES/CEV; Roupe Kit NMI Contractor 10 CES/CEV; Ryles Dale E Civ USAFA/XPP; Siegele William A Civ 10 CES/CECV; Steigerwald Scott W Capt 10 AMDS/SGPB; Strohm Diane J Civ 10 CES/CECN; Wood Kevin D MSgt 10 ABW/XP  
**Cc:** Koury George J Civ USAFA/ADWIG  
**Subject:** Draft Environmental Assessment Review

Good morning all,

Attached is the Draft Environmental Assessment for the Proposed Golf Learning Center and Driving Range. Please provide comments on USAFA Form 519 to me by COB 29 January 2007. Thank you.

//SIGNED//  
Richard W. Normandie, Contractor, USAFA  
Environmental Planner





## Normandie Richard W Contractor 10 CES/CEV

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**From:** Barrett Debbie K Civ 10 CES/CEPDE  
**Sent:** Tuesday, January 30, 2007 7:55 AM  
**To:** Normandie Richard W Contractor 10 CES/CEV  
**Subject:** RE: Draft Environmental Assessment Review

Great visuals Rich!

No comment.

Debbie

-----Original Message-----

**From:** Normandie Richard W Contractor 10 CES/CEV  
**Sent:** Monday, January 22, 2007 9:15 AM  
**To:** Barrett Debbie K Civ 10 CES/CEPDE; Bush Brian X Civ USAFA/JA; Ceciliani Paul M Civ USAFA/ATO; Chaltry Dennis R Civ 10 CES/CEF; Gann Sharon M Civ USAFA/CEC; Henderlong Keith T Maj 94FTS; Lee Eddie D Civ USAFA/PAC; Leikam Karen R Contractor 10 CES/CECR; Lima Joseph E Contractor 10 CES/CEX; McCoy Brian L TSgt USAFA/CWTTR; Mhlbachler Brian S Civ 10 CES/CECN; Miranda Jerry NMI Civ 306 OSS/OSAA; Mitnik James P Civ HQ USAFA/CEPDP; Normandie Richard W Contractor 10 CES/CEV; Roupe Kit NMI Contractor 10 CES/CEV; Ryles Dale E Civ USAFA/XPP; Siegele William A Civ 10 CES/CECV; Steigerwald Scott W Capt 10 AMDS/SGPB; Strohm Diane J Civ 10 CES/CECN; Wood Kevin D MSgt 10 ABW/XP  
**Cc:** Koury George J Civ USAFA/ADWIG  
**Subject:** Draft Environmental Assessment Review

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//SIGNED//

Richard W. Normandie, Contractor, USAFA  
Environmental Planner





## Normandie Richard W Contractor 10 CES/CEV

---

**From:** Koury George J Civ USAFA/ADWIG  
**Sent:** Monday, January 29, 2007 5:38 PM  
**To:** Normandie Richard W Contractor 10 CES/CEV  
**Subject:** RE: Draft Environmental Assessment Review

No comments from AH.

Looks great Richard, thanks.

George

-----Original Message-----

From: Normandie Richard W Contractor 10 CES/CEV

Sent: Monday, January 22, 2007 9:15 AM

To: Barrett Debbie K Civ 10 CES/CEPDE; Bush Brian X Civ USAFA/JA; Ceciliani Paul M Civ USAFA/ATO; Chaltry Dennis R Civ 10 CES/CEF; Gann Sharon M Civ USAFA/CEC; Henderlong Keith T Maj 94FTS; Lee Eddie D Civ USAFA/PAC; Leikam Karen R Contractor 10 CES/CECR; Lima Joseph E Contractor 10 CES/CEX; McCoy Brian L TSgt USAFA/CWTTR; Muhlbachler Brian S Civ 10 CES/CECN; Miranda Jerry NMI Civ 306 OSS/OSAA; Mitnik James P Civ HQ USAFA/CEPDP; Normandie Richard W Contractor 10 CES/CEV; Roupe Kit NMI Contractor 10 CES/CEV; Ryles Dale E Civ USAFA/XPP; Siegele William A Civ 10 CES/CECV; Steigerwald Scott W Capt 10 AMDS/SGPB; Strohm Diane J Civ 10 CES/CECN; Wood Kevin D MSgt 10 ABW/XP

Cc: Koury George J Civ USAFA/ADWIG

Subject: Draft Environmental Assessment Review

Good morning all,

Attached is the Draft Environmental Assessment for the Proposed Golf Learning Center and Driving Range. Please provide comments on USAFA Form 519 to me by COB 29 January 2007. Thank you.

//SIGNED//

Richard W. Normandie, Contractor, USAFA  
Environmental Planner





## Normandie Richard W Contractor 10 CES/CEV

---

**From:** McFarland Sean C Maj USAFA/XPP  
**Sent:** Monday, January 29, 2007 4:29 PM  
**To:** Normandie Richard W Contractor 10 CES/CEV  
**Cc:** Ryles Dale E Civ USAFA/XPP  
**Subject:** FW: Draft Environmental Assessment Review

**Attachments:** Golf Learning Center EA DRAFT EIAP DISTRO.doc; form519.doc



Golf Learning  
Center EA DRAFT ..



form519.doc (84  
KB)

Mr. Normandie,  
XP concurs with comments. Please see attached Form 519, thanks!

V/R,  
Maj Sean McFarland  
USAFA/XPP  
Chief, Plans Division  
DSN: 333-0837, Comm: 719-333-0837

-----Original Message-----

**From:** Ryles Dale E Civ USAFA/XPP  
**Sent:** Monday, January 29, 2007 12:57 PM  
**To:** McFarland Sean C Maj USAFA/XPP  
**Cc:** Wilmer James M Maj USAFA/XPP  
**Subject:** FW: Draft Environmental Assessment Review

Sir,  
Concur with comments. Send to Richard W. Normandie.

Pg. 6, para. 1.3, second paragraph, line 2: part 989 should be capitalized (Part 989). Reason: Title

Pg. 20, para 4.2.1 first bulleted item line 1: BMP is not spelled out anywhere previous to using this abbreviation

//SIGNED//

Dale Ryles  
Plans Manager

HQ USAFA/XPP, 2304 Cadet Drive, USAFA CO 80840-5002 DSN 333-3668, Com 719-333-3668, Fax 719-333-3263 -----  
Original Message-----

**From:** Normandie Richard W Contractor 10 CES/CEV  
**Sent:** Monday, January 22, 2007 9:15 AM  
**To:** Barrett Debbie K Civ 10 CES/CEPDE; Bush Brian X Civ USAFA/JA; Ceciliani Paul M Civ USAFA/ATO; Chaltrey Dennis R Civ 10 CES/CEF; Gann Sharon M Civ USAFA/CEC; Henderlong Keith T Maj 94FTS; Lee Eddie D Civ USAFA/PAC; Leikam Karen R Contractor 10 CES/CECR; Lima Joseph E Contractor 10 CES/CEX; McCoy Brian L TSgt USAFA/CWTTR; Muhlbachler Brian S Civ 10 CES/CECN; Miranda Jerry NMI Civ 306 OSS/OSAA; Mitnik James P Civ HQ USAFA/CEPDP; Normandie Richard W Contractor 10 CES/CEV; Roupe Kit NMI Contractor 10 CES/CEV; Ryles Dale E Civ USAFA/XPP; Siegele William A Civ 10 CES/CECV; Steigerwald Scott W Capt 10 AMDS/SGPB; Strohm Diane J Civ 10 CES/CECN; Wood Kevin D MSgt 10 ABW/XP  
**Cc:** Koury George J Civ USAFA/ADWIG  
**Subject:** Draft Environmental Assessment Review

Good morning all,

Attached is the Draft Environmental Assessment for the Proposed Golf Learning Center and Driving Range. Please provide comments on USAFA Form 519 to me by COB 29 January 2007. Thank you.

//SIGNED//

Richard W. Normandie, Contractor, USAFA









## Normandie Richard W Contractor 10 CES/CEV

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**From:** Bush Brian X Civ USAFA/JA  
**Sent:** Monday, January 29, 2007 1:06 PM  
**To:** Normandie Richard W Contractor 10 CES/CEV  
**Subject:** RE: Draft Environmental Assessment Review

Rich:

I am going to provide my comments in this fashion vice USAFA Form 519. Please let me know if you want hardcopy.

(1) Although not legally objectionable for this EA, our treatment of alternatives is weak and if challenged might be difficult to defend. This is not unusual - USAFA has historically had a habit of deciding what we wanted to do in terms of proposed actions and then discarded the "alternative" methodology envisioned by NEPA. Remembering the NEPA is a commander tool to make good decisions, limiting alternatives or rejecting feasible alternatives on weak grounds undermines the whole process. Here, we really offer only the no action and proposed action - although we discuss other alternatives that were rejected, our methodology is a bit suspect in my opinion.

(2) Of greater legal import, I have issues with sections 4.2.4 and 4.3.4 in terms of stating that as long as we follow rules, regulations and best management practices, no mitigation is required. In my opinion, this is an incorrect view of mitigation. Stated differently, mitigation is that which is required to reduce environmental consequences to an insignificant level - and if any are required, they must be made mandatory in the mitigations section and the FONSI. Here, both 4.2 and 4.3 appear to state that we will have potentially adverse consequences unless we adopt a host of measures designed to limit these affects (BMP's for example). We then, inconsistently, state that no mitigations are required. A better, and legally required, course of action is to acknowledge that certain actions will be required (e.g. compliance with BMP's) so as to mitigate the consequences and arrive at a FONSI. I do not believe the way that you have it stated at present in either of those sections is legally correct.

Otherwise, I think you have done a good job on the EA and answered my earlier comments and questions. Please feel free to give me a call to discuss if you have any questions. I assume that I will get a chance to review the final product and FONSI before it goes to the CV for signature.

I'll try to review the other EA (Visitor Expansion) as soon as I can, but it may not be today.

Brian

-----Original Message-----

**From:** Normandie Richard W Contractor 10 CES/CEV  
**Sent:** Monday, January 22, 2007 9:15 AM  
**To:** Barrett Debbie K Civ 10 CES/CEPDE; Bush Brian X Civ USAFA/JA; Ceciliani Paul M Civ USAFA/ATO; Chaltry Dennis R Civ 10 CES/CEF; Gann Sharon M Civ USAFA/CEC; Henderlong Keith T Maj 94FTS; Lee Eddie D Civ USAFA/PAC; Leikam Karen R Contractor 10 CES/CECR; Lima Joseph E Contractor 10 CES/CEX; McCoy Brian L TSgt USAFA/CWTTR; Muhlbachler Brian S Civ 10 CES/CECN; Miranda Jerry NMI Civ 306 OSS/OSAA; Mitnik James P Civ HQ USAFA/CEPDP; Normandie Richard W Contractor 10 CES/CEV; Roupe Kit NMI Contractor 10 CES/CEV; Ryles Dale E Civ USAFA/XPP; Siegele William A Civ 10 CES/CECV; Steigerwald Scott W Capt 10 AMDS/SGPB; Strohm Diane J Civ 10 CES/CECN; Wood Kevin D MSgt 10 ABW/XP  
**Cc:** Koury George J Civ USAFA/ADWIG  
**Subject:** Draft Environmental Assessment Review

Good morning all,

Attached is the Draft Environmental Assessment for the Proposed Golf Learning Center and Driving Range. Please provide comments on USAFA Form 519 to me by COB 29 January 2007. Thank you.

//SIGNED//

Richard W. Normandie, Contractor, USAFA  
Environmental Planner





<b>REVIEW COMMENTS</b>			Date Reviewed: 1/22/2007
PROJECT: Draft EA - Golf Learning Center and Driving Range			<b>FROM:</b> Brian Muhlbachler 10 CES/CECN
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"><input type="checkbox"/> PRELIM F&amp;R</div> <div style="width: 33%;"><input type="checkbox"/> CIVIL</div> <div style="width: 33%;"><input type="checkbox"/> MECHANIC.</div> <div style="width: 33%;"><input checked="" type="checkbox"/> 35% Submittal</div> <div style="width: 33%;"><input type="checkbox"/> ARCHITEC.</div> <div style="width: 33%;"><input type="checkbox"/> ELECTRICAL</div> <div style="width: 33%;"><input type="checkbox"/> 65% Submittal</div> <div style="width: 33%;"><input type="checkbox"/> STRUCTURAL</div> <div style="width: 33%;"><input type="checkbox"/> GENERAL</div> <div style="width: 33%;"><input type="checkbox"/> 90% Submittal</div> <div style="width: 33%;"><input type="checkbox"/></div> <div style="width: 33%;"><input type="checkbox"/> 100% Submit.</div> </div>			<b>TO:</b> Richard Normandie 10 CES/CEV
DRAWING NO. OR PARAGRAPH NO.	ITEM NO.	COMMENT	REVIEW ACTION
2.4.1		Site Clearance. The proposed area for the driving range supports a healthy population of noxious weeds (especially diffuse knapweed and yellow toadflax). Any material that needs to be removed from the site (soil, debris, vegetation) during clearing should be hauled to a landfill, not disposed of at the USAFA mulching facility.	
3.1.3		Future Land Use. Recommend reducing the list of future land use restrictions to only those that are relevant to the proposed project.	
3.3.3		Threatened and Endangered Species. Delete all reference to the Mexican spotted owl and greenback cutthroat trout. There is no suitable habitat for these species in the project area. The proposed project lies well outside the Conservation Zone for the Preble's meadow jumping mouse, and this species will not be affected by the proposed project.	



## Normandie Richard W Contractor 10 CES/CEV

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**From:** Bush Brian X Civ USAFA/JA  
**Sent:** Monday, November 06, 2006 1:31 PM  
**To:** Normandie Richard W Contractor 10 CES/CEV  
**Subject:** RE: Golf Learning Center EA

Rich:

Comments follow:

- (1) Maps/drawings of this project in draft EA are not all that clear. It might be helpful to make them a bit bigger so that terrain features are more identifiable to the decision maker. When I do a final review – would like a 1:50 map of the area with project overlay, if you can provide and would like to review the hard copy vice electronic.
- (2) Purpose and need for action (as well as rest of EA) raise the question of what will happen to the existing driving range – particularly when we use a justification like “range balls hit by cadets frequently impact near the first and seventh holes causing a number of close calls between struck balls and patrons on the course.” Presumably, advancements in golf technology are not limited to cadets – so is this a real reason that supports the project? Additionally, although we take some pains to try to go the opposite direction – it seems to me that these projects may be severable (i.e. they could build a new facility and still use the existing driving range – which, as noted below, might reduce environmental impacts a good deal). At a minimum, shouldn't this be a potential alternative?
- (3) Paragraph 1.3 is borrowed from the West Perimeter Protection Plan – and cites to that plan vice the one intended.
- (4) A common theme throughout – the precise location of this action is not well documented – noting that we are really dealing with two different but interrelated projects – the building and the driving range. For example, as the diagram at figure 1-3 notes (and as my own observations confirm) it appears that a portion of the driving range itself (and perhaps even more so the safety fan which is always more to the right than the left because most right handed players tend to slice the ball) overlaps the entry road to the golf course (not a very good situation). Also note that figure 2-1 shows a different boundary than figure 1-3.
- (5) The description of alternatives – indeed the handling of alternatives – is weak. For example, we state that we are going to build a new clubhouse and that the current design does not include room for the cadet team. It raises the obvious question of why? Shouldn't we consider an alternative that builds a bigger clubhouse that includes room for the cadet team?
- (6) We state that the building is going to be in a flat area between two small hills (noting the area isn't all that flat). We then state that the driving range is going to descend into a small valley. Several observations: (a) there doesn't seem to be any description of earthmoving to make the driving range work – my observation makes me doubt that we can use the land as it currently sits – even if we clear trees and brush (you would never find or be able to pick up the balls), (b) there is currently a storage area for construction supplies located in the driving range, (c) the description of the roads that might be affected is confusing – for example, I'm not sure where the “existing, but seldom used, road near the parking lot” is located – as opposed to TWO (or maybe even THREE) roads in the valley leading to the base of the dam.
- (7) Does installation of a handicapped accessible ramp at the front of the proposed building signify an expanded role for the golf learning center?
- (8) EA's that use phrases like “may be planted” (referring to trees along the eastern boundary of the driving range) and “could be erected” (referring to potential nets along that same boundary) are problematic – particularly when at least one drawing (and my own observation) seems to indicate that the golf course entrance road is definitely in play. Might these have to be “mitigations”?
- (9) The description of the driving range tends to minimize the potential environmental impacts – which I judge to be more significant. Unless I am mistaken, it isn't just a matter of taking out trees and gambrells oak in this area – at least a portion of the ground is going to have to be contoured. Additionally, orientation of the range will be important – as will describing whether you have to remove vegetation from the hillside across the valley from the facility (I don't know how many yards it is – but it could be close to the range of golf balls).
- (10) We consistently say that no mitigation measures are required for the proposed action. As noted above on the





subject of range fan and orientation, I have some doubts. Additionally, the discussion of proposed water impacts is weak. We state that the nearest receiving waters are merely ¼ mile away (I'm not sure that we actually identify these waters) and we don't deal as completely as we should with potential run-off issues from a cleared driving range. There are significant flooding impacts in the parade loop drainage as it crosses the golf course entrance road. If we were to build this driving range as designated – are we going to create another run-off situation where the valley crosses the road (because at a minimum we are going to have to take out a considerable amount of vegetation)?

(11) I don't know why we include comments about contractor responsibilities on less than one acre projects – since this will affect at least 11 acres.

(12) I am not a scientist – but the statement “with adherence to best management practices ... would not be expected to significantly increase the degree of erosion already experienced within the project area” seems like a reach when you actually look at what they are going to have to do to the ground (going back again to issues with the adequacy of project description on the driving range).

(13) Paragraph 4.2.3 is not legally supportable. If there are required mitigation measures – they MUST be listed in the EA – particularly if they are necessary to get to a FONSI, but even if they are not. We can't just cite to unnamed regulations. Apply this comment to the other paragraphs of similar import in section 4.

(14) Your statement in paragraph 4.5.3 that “native vegetation would remain and the area would be not (SIC) be significantly degraded over current conditions” seems like quite a stretch. I suspect that they are going to remove a heck of a lot of vegetation if they put in the driving range – while this may not be significant in terms of available vegetation to wildlife on the academy – we should be honest and acknowledge that we are going to have a pretty clear area where we had a lot of vegetation before (and note my earlier comments on what they have to do to the hillside).

(15) Paragraph 4.6 – seems to indicate not accessible to public (so why the ADA ramp?) and might there be an indirect impact to the golf course entrance road?

(16) It's probably not a big deal – but we ought to state whether we expect to be able to pick up all the golf balls they hit – or if we don't, they don't harm anything.

(17) The statement in paragraph 4.8 that “the proposed action would implement ground-disturbing activities that would produce short-term effects to soil, water quality and habitat while providing long term benefits of increased management of the area” leaves a bit of clarity to be desired. What exactly does this mean? We're removing a good deal of native vegetation in terms of mature trees and gambrell oaks, probably smoothing out the area a bit, and forcing wildlife to go elsewhere – what exactly is the benefit of increased management (as opposed to fulfillment of the golf team's dream).

In sum, we seem to have focused on just doing this one way – or not at all. Our identification of alternative ways to accomplish the same result is very weak and our linking of the two projects without acknowledging that they could in fact be separated is bootstrapping. Additionally, our discussion of WHY the resulting environmental impacts will not be significant is a bit weak, in my opinion. We seem to be more focused on just saying there won't be any impacts – instead of identifying real impacts and discussing why these impacts are not significant or can be mitigated. Finally, after walking around on site – I question whether our project description is adequate for the driving range (the building is ok). Need a better layout here. For example, I don't find any indication of which way the driving range is actually going to be oriented – leaving open the possibility it will be FROM the facility towards the Northeast (in the direction of the entrance road) – as opposed to alongside the facility in the direction of the hill (which has its own issues).

Call me if you have questions or comments concerning the above.

Brian

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From: Normandie Richard W Contractor 10 CES/CEV  
Sent: Friday, November 03, 2006 9:56 AM  
To: Bush Brian X Civ USAFA/JA  
Subject: Golf Learning Center EA

Mr. Bush,

I am preparing to go Draft with this EA, but before I do that I would like your input. This version is missing figure numbers and a complete table of contents (among other things). Please review and provide comments to me so I can improve it and avoid a lengthy review process. Thank you.





//SIGNED//

Richard W. Normandie, Contractor, USAFA

Environmental Planner

<< File: Golf Learning Center EA - DRAFT.doc >>



# Memo for Record

**From:** Kit Roupé, Community Base Planning

**Date:** 26-Apr-04, updated 3 Aug 07

**Re:** New Golf Course Clubhouse, WO 54330, PN 08-5201 and Golf Learning Center & Driving Range

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1. **Objective.** Construct a new clubhouse facility on the existing site of the current clubhouse.

2. **Background.**

- a. Current clubhouse does not meet current 36-hole golf operations to <sup>now</sup> ~~lose~~ over 70,000 rounds of golf, annually.
- b. The new club house site will need to be re-evaluated for the correct standard design and size to ensure any minor site modifications can be addressed in the site plans.

3. **Lehman Valley Development Plan.**

- a. The 17-21 Nov 2003 planning charette for the golf course facilities included looking at three operational sites for the golf course clubhouse. The selected option #3 is to rebuild the clubhouse on the existing site. The option is attached to this memo.
- b. This building is not a contributing building to the Academy's historic elements. The plans do not need to go to SHPO for review unless the government specifically directs the cultural resource manager and project manager to do so.
- c. Three locations were examined to validate the previously plan for a Driving Range, which is now associated with the Cadet Golf Learning Center: Cadet Area, co-location with the existing Clubhouse, lower end of the preferred site location and then the preferred site location. A comprehensive master plan was developed for the Golf Team requirements, which included: golf learning center, driving range, putting and chipping courses and a 9 hole, par 3 course.

(1) The Cadet Area offered two locations: the current putting course on the west side of the Cadet Gym, bldg 2170, and the obstacle course west of the Falcon Mews. The putting area is too small with balls being driven out into the athletic fields. Additionally, the putting area also needs to be relocated because of a future Gym expansion. The Golf Team uses the NAF greens at the golf course. The obstacle course is an active facility used by the Character Development Center (CDC). Even relocating this course to someplace on the western boundary, will add to the cost of the Golf Team's learning center, and a large tree clearing effort is necessary to use the space. The required distance for the driving range is also insufficient. The CDC course is also adjacent to Goat Camp Creek and PMJM habitat, creating additional concerns. The Cadet Area still kept the team's facility fragmented; some components in the Cadet Area and others at the golf course area. Travel between locations reduced the limited time cadets have for the team.

(2) Two issues arise when looking at keeping the Golf Learning Center with the existing clubhouse: funding constraints and construction timing. The golf operations is a NAF C operation, whereas the Cadet Golf Team is an appropriated operation associated with AD's mission. After arduously looking at putting these two operations in the same building, it was determined that funding was possible but approvals unlikely. If approve there was also the timing of the NAF project and AHAAA being able to provide the necessary funds at the right time to support construction of their space. The NAF clubhouse is scheduled to be demolished and rebuilt on the existing site in FY08. NAF operations will move into a trailer during the construction period and is not allocating space for the Cadet Golf Team. The Golf Team still needs a place during construction. The decision was made to construct the Golf Team Learning Center independently and in close proximity to the existing parking and utility





lines. It also followed the original intent to consolidate the team's resources into one area and optimizing the team's time for golf versus travel.

(3) Consideration was given for the entire comprehensive development plan in the golf area. A 2000 development placed the driving range where it is proposed in this site taking advantage of the non-potable reservoir's spillway. Several locations were examined at the golf area, to include not building a driving range at all and continuing to use the NAF driving range. A former 18-hole golf course was modified to provide the appropriate layout for the 9-hole course and associated greens. The driving range did not fit within that layout because of the area's terrain and slopes. The Golf Team needs to be able to use the driving range at will, which it cannot do at the present time.

(a) Two sites were considered for the driving range: the previously sited in the spillway and within the 9-hole course area. The 9-hole course area could not provide the distance needed for the driving distances. The spillway could just accommodate it. Early in the process the Cadet Golf Team coach stated greens were not necessary but distance makers were. The team is seeking distance and accuracy.

(b) The Learning Center had three locations: one associated with the proposed new 9-hole course, one at the bottom of the spillway facing south and one at the top of the south ridge facing north. Questions concerning the actual construction of the 9-hole course, need for parking, extending utility lines, and the distance between the 9-hole driving range and the learning center made this option unreasonable. The spillway is attractive because it cannot be built, the trees the thinnest in the entire area, the slopes were reasonable. Minimal tree clearing is necessary for both spillway locations, in fact the trees provided a natural barrier between the driving range and the road. The proposed location at the bottom of the spillway shortened the driving course, required a parking lot, did not have utility lines, and participants expressed concerns of golf balls hitting parked vehicles. The location at the top of the ridge facing north provided the full distance, allowed an operational solution to access the reservoir facilities, required the shortest utility runs, provided parking not available at other locations, reduced the safety concerns.

4. **Recommendation.** Because this project replaces a building at an existing site, facility board approval is not needed. Completion of the form 813 for any unknown environmental factors should be done before completing design plans to allow for asbestos or any other conditions that may increase the cost of the project.



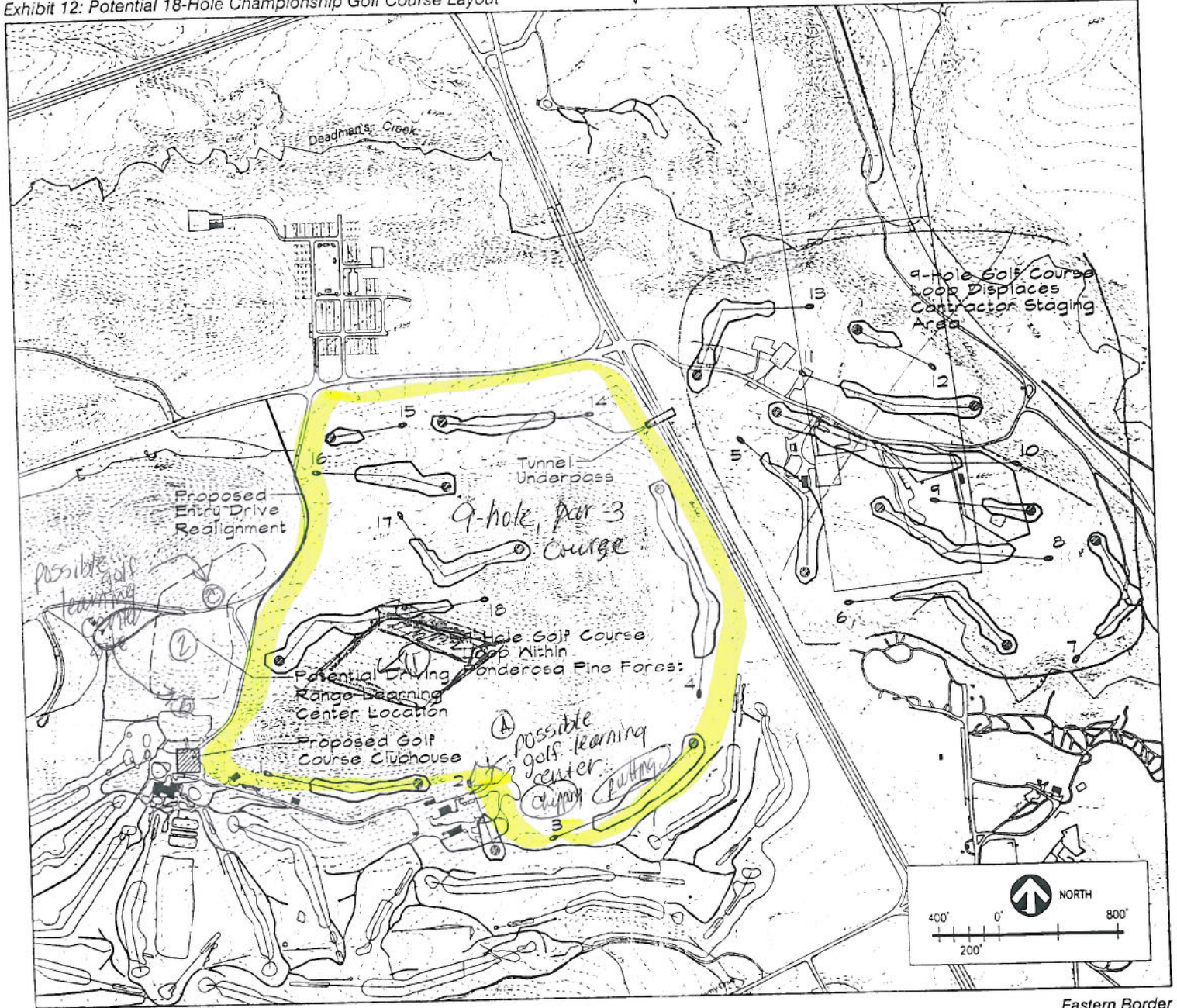


227-02

Area to develop

18-Hole course no longer planned. Learning ctr plan

Exhibit 12: Potential 18-Hole Championship Golf Course Layout



Possible - adaptation to Page 7.14 (cover)



## Normandie Richard W Ctr 10 CES/CEV

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**From:** Koury George J Civ USAFA/ADWIG [George.Koury@usafa.edu]  
**Sent:** Wednesday, September 12, 2007 1:05 PM  
**To:** Normandie Richard W Ctr 10 CES/CEV  
**Cc:** Doan Brandon K Maj USAFA/ADML; Gustafson Roger D Civ USAFA/ADSS  
**Subject:** RE: Quick Question - Golf Learning Center

Richard,

A driving range allows the cadets to practice under conditions that are a little more like playing conditions (natural grass, lighting, wind, rain etc). Simulators are useful for practice indoors during the winter months, but the most advanced simulator are only measuring the first two feet of flight and event then you are hitting balls off of a synthetic surface. Additionally, a simulator would allow only one cadet to practice at a time (there are 15 on the team). The cost of a simulator is in the 80K range and you must spend about 600 a year on replacement screens. While I would love to have a simulator for the months when it is below freezing, it is not practical as a replacement for a driving range.

Hope that helps.

George

-----Original Message-----

**From:** Normandie Richard W Ctr 10 CES/CEV [mailto:Richard.Normandie.ctr@USAFA.af.mil]  
**Sent:** Wednesday, September 12, 2007 12:48 PM  
**To:** Koury George J Civ USAFA/AHW-GO  
**Subject:** Quick Question - Golf Learning Center

Mr. Koury,

A question came up as to why a driving range is desirable for the golf team as opposed to using simulators (ie a large computer screen that cadets would hit the balls into). Was this considered and if so why would this not be practicable? Thanks.

//SIGNED//

Richard W. Normandie, Contractor, USAFA

Environmental Planner



